TOSHIBA

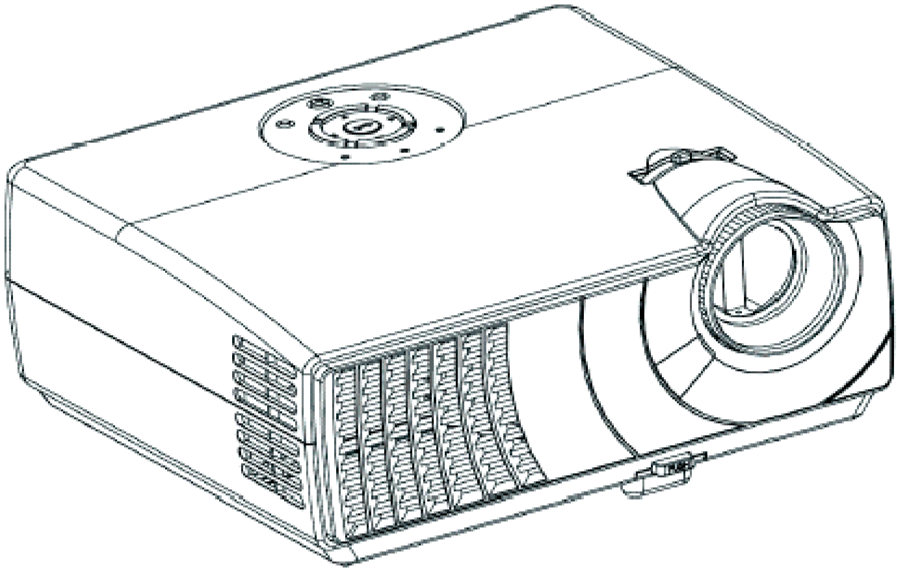
DRAFT COPY

SERVICE MANUAL

DLP PROJECTOR

TDP- T8, TDP-T9,

TDP-S8



Document Created in UK Mar., 2006

Preface

This manual is applied to S8 T8 T9 0.55” DMD SVGA (S8) and XGA (T8/T9) digital projection system. It’s the mode of single Panel, 180 Watt Compact P-VIP Lamp and 800(H) x 600(V) (S8) and 1024(H) x 768(V) (T8/T9) and resolution. The manual gives you a brief description of basic technical information to help in service and maintaining the product.

Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them.

This manual is for technicians and people who have an electronic background. Send the product back to the distributor for repairing and do not attempt to do anything that is complex or is not mentioned in the troubleshooting.

NOTICE :

The information found in this manual is subject to change without prior notice. Any subsequent changes made to the data herein will be incorporated in further edition.

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Manual Version 1.0

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Introduction

T9/T8/S8 main different parts

Parts \ Model	**T9**	**T8**	**S8**
MAIN BOARD	T9 F/W	Same as T9	S8 F/W
DMD Chip	0.55 XGA	0.55 XGA(Same as T9)	0.55SVGA
Top Cover	T9	T8	S8
Bottom Cover	T9	Same as T9	S8
Front Cover	T9	T8	Same as T9
Rear Cover	T9	Same as T9	S8
Lamp Cover	T9	Same as T9	S8
KEYPAD CAP	T9	Same as T9	S8
ELEVATOR BASE	T9	Same as T9	S8
ELEVATOR PUSH BUTTON	T9	Same as T9	S8
Remote Controller	Interlink (with mouse)	SMK(Same as S8)	SMK
User's Manual (CD)	T9	T8	S8
User's Manual (Paper)	T9	T8	S8
Spec label	T9	T8	S8
Battery	T9 #4	Same as S8	S8 #3

1-1 Highlight

No	Item	Description
1	DMD	One panel 0.55" DMD SVGA projection system (S8) One panel 0.55" DMD XGA projection system (T8 / T9)
2	Lamp	200W Lamp dimmable to 180W
3	Cooling System	High efficiency cooling system with low system acoustic noise level
4	Weight	Light weight < 4.5 lbs
5	Zoom lens	Manual focus projection 1:1.10 zoom lens

No	Item	Description
6	Resolution	True 800X600 resolution, 16.7M True colors (S8) True 1024 X 768 resolution, 16.7M True colors (T8/T9)
7	Video capability	-With up, down, left, and right screen reverse -Build-in full screen NTSC/PAL/SECAM video capability with S-video / Composite / component through D-sub terminals -SXGA/XGA/SVGA/VGA/MAC compatibility. -Auto image re-sizing to 800x600 full screen (S8) -Auto image re-sizing to 1024 x 768 full screen (T8/T9) -Auto detection of computer signal input -Auto Image synchronization (Auto-tracking /frequency /position adjustment) -Powerful enlarge and freeze function
8	Expandiability	Automatically saves adjustments for future use
9	Language	On-screen menu with 14 languages
10	Voltage	Adaptive voltage control fan speed
11	Speaker	Built-in one speaker with 2 Watt amplifier

1-2 Mechanical Specifications

No	Item	Description
1	Dimensions (WxHxD)	239*107*207 mm
2	Weight	< 4.5 lbs.
3	Cooling System	-Advanced air flow -Two fans with low system acoustic noise level -Temperature control circuits with adaptive voltage control fan speed -Maximum touch temperature follows UL60950
4	Cabinet	Provides space for PCB boards, fan, optical engine, power supply Lamp
5	Tilt Angle	6 degree with elevator mechanism
6	Keystone correction	+/ -15 degree

No	Item	Description
7	Lamp Door Protection	Lamp power supply shut off automatically when door open

1-3 Electrical Specifications

No	Item	Description
1	Power Supply	-Universal AC 100--240V~ 50 / 60 Hz with PFC input -200W Lamp @ normal operation -Variance FAN speed control (Depend on temperature variance)
2	Power Consumption	-250 Watt +/- 10% at normal operation -Stand-by mode < 13W
3	Terminals	-One D-Sub 15-pin female connector for analog RGB / HDTV component video -One D-Sub 15-pin female connector for monitor output -One 3.5 mm phone jack for audio input -One 3.5 mm phone jack for audio output -One Mini DIN 4-pin for S-Video Input -One RCA Jack for Composite Video Input -RS232 connector
4	Input signal spec.	-PC Signal -Hsync Frequency 31.35~80 kHz -Vsync Frequency 56 ~ 85 Hz -Video Signal RGB (PC) -Analog RGB 0.7Vp-p, 75 ohm -Analog RGB 1Vp-p, 75 ohm, Sync. signal -Separate TTL H,V Sync. -Composite TTL Sync. -Video -Composite video 1Vp-p,75 ohm -S-video Luminance 75 ohm -Chrominance 75 ohm
5	System Controller	TI DDP2000
6	Video Compatibility	Standards : NTSC: M (3.58MHz), 4.43 MHz PAL: B, D, G, H, I, M, N SECAM: B, D, G, K, K1, L HDTV: 480i/p, 576i/p, 720p, 1080i

No	Item	Description
7	On-Screen Display Menu	14 languages selection: English, François, German, Italiano, Espanol, Portuguese, Russian, Swedish, Turkism, Polish, Japanese, Simplify Chinese, Traditional Chinese, Korea

1-4 Optical Specifications

No	Item	Description
1	Projection lens	F# 2.7 – 3.0 @2.4m, f = 21.8 ~23.8mm @2.4m. 1.10X Manual Zoom Lens. (S8) - F# 2.7 – 3.0 @2.4m, f = 21.81 ~ 23.77 mm @2.4m. 1.10X Manual Zoom Lens. (T8/T9)
2	Projection Image Size	Adjustable from 34.67” to 254.22” (Diagonal)
3	Throw Distance	Suggested throw distance: 1.5~10m (Optical Performance)
4	Throw Ratio	1.94 ~ 2.13; 100”/3.94m ~ 4.33m
5	Brightness	-1600 ANSI Lumens (Typical) (S8) -1440 ANSI Lumens (Minimum) (S8) - 1800 ANSI Lumens (Typical) (T8/T9) - 1600 ANSI Lumens (Minimum) (T8/T9)
6	Contrast	-1800:1 Typical (Full on / full off) -1200:1 Minimum (Full on / full off)
7	Uniformity	-60% Typical ANSI -50% Minimum ANSI
8	TV Distortion	-Horizontal-Up: <= |+/-1%| -Horizontal-Down: <= |+/-1%| -Vertical: <= |+/-1%|
9	Lens Offset	115%+/-10%
10	Lamp	Osram E17.5e 200W P-VIP Lamp

1-5 Environmental

No	Item	Description
1	Temperature	- Operating: 5 - 35°C - Storage: -20- - 60°C If the lamp temp is too high, the warning message will appear.
2	Maximum Humidity	- Operating: 5 - 35°C, 80% RH (Max.), non-condensing - Storage: -20- - 60°C, 80%RH (Max.), non-condensing
3	Acoustic noise level	- Normal mode: 38 dB(A)(typical at 23 +/-2 degree C) - Dim mode: 35 dB(A) (typical at 23 +/-2 degree C) - Noise measurement follows ISO 7779, A-weighted sound pressure level measurement, 7200 rpm color wheel rotational speed
4	Lamp life	3000 hours marketing at full power mode Up to 2000 hours with 50% survival rate/ 50% maintenance to initial lumens at full power mode (According to current lamp specification) 5000 hours marketing at eco-mode Up to 3000 hours with 50% survival rate/ 50% maintenance to initial lumens at eco-mode (According to current lamp specification)
5	Altitude	- Operating 0~2,500 ft, for 5°C~35°C 2,500~5,000 ft, for 5°C~30°C 5,000~10,000 ft, for 5°C~25°C - Storage 40,000 ft
6	MTBF	- Operating more than 12,000 hours (90% Confidence Level)

1-6 Compatible Mode

Analog (S8/T8/T9)

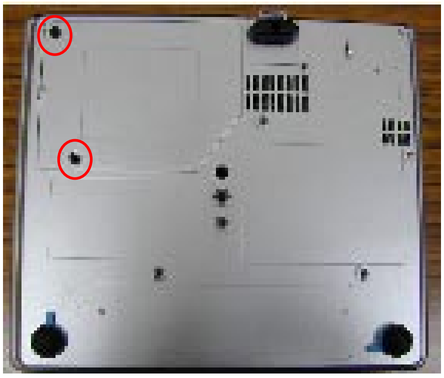
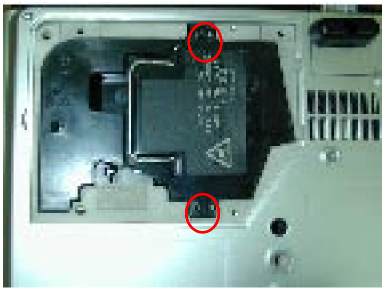
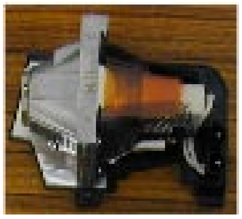
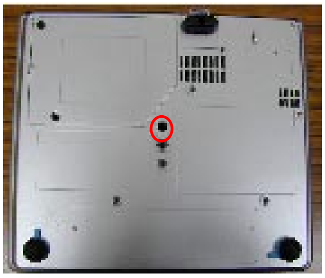
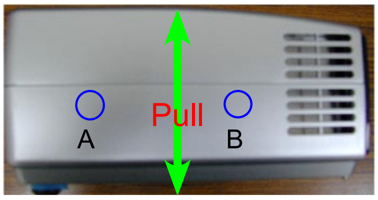
Compatibility	Resolution	V-Sync [Hz]	H-Sync [KHz]
VGA	640x350	70	31.5
	640x350	85	37.9
	640x400	85	37.9
	640x480	60	31.5
	640x480	72	37.9
	640x480	75	37.5
	640x480	85	43.3
	720x400	70	31.5
	720x400	85	37.9
SVGA	800x600	56	35.2
	800x600	60	37.9
	800x600	72	48.1
	800x600	75	46.9
	800x600	85	53.7
XGA	1024x768	60	48.4
	1024x768	70	56.5
	1024x768	75	60.0
	1024x768	85	68.7
SXGA	1152x864	70	63.8
	1152x864	75	67.5
	1152x864	85	77.1
	1280x960	60	60
	1280x960	75	75
	1280x1024	60	63.98
	1280x1024	75	79.98
MAC 16”	832x624	74.55	49.725
MAC 19”	1024x768	75	60.24
MAC	1152x870	75.06	68.68
MAC G4	640x480	60	31.35
i Mac DV	1024x768	75	60
i Mac DV	1152x870	75	68.49
i Mac DV	1280x960	75	75

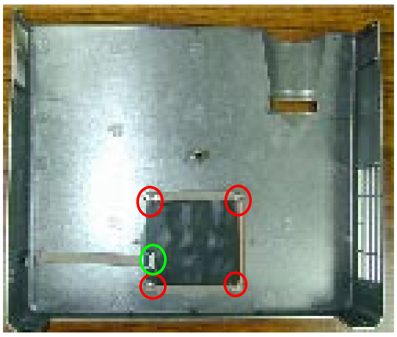
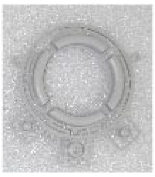
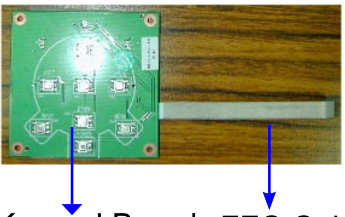
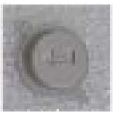
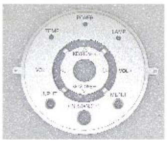
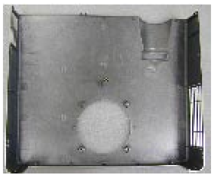
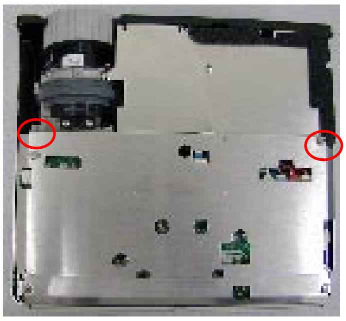
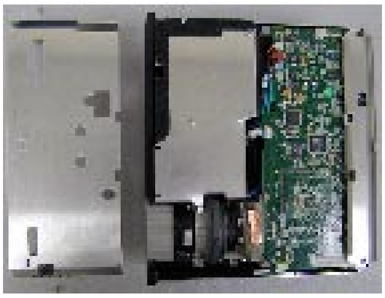
Disassembly Process

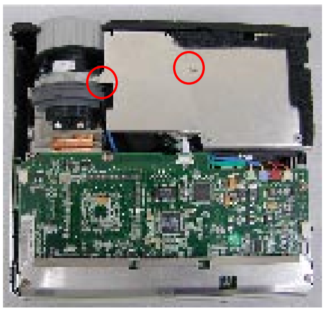
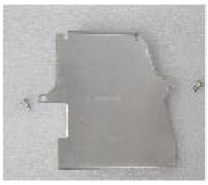
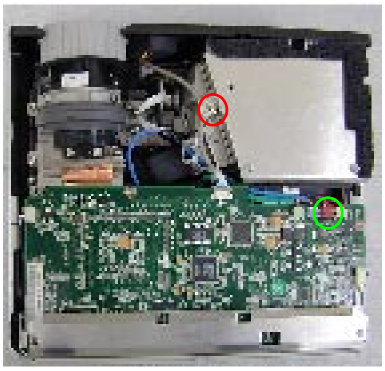
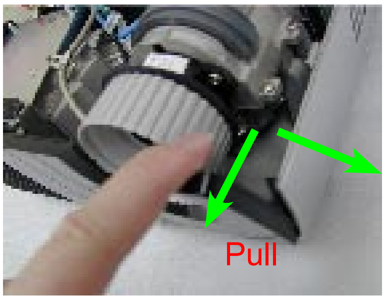
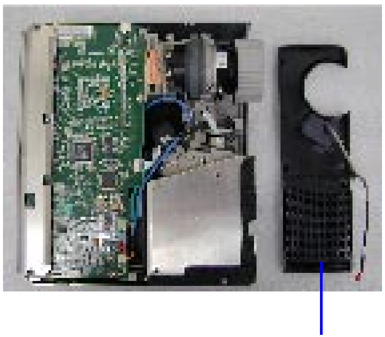
2-1 Equipment Needed

Item	Photo	Item	Photo
Screw Bit (+) :107		Hex Sleeves 5mm	
Screw Bit (+) :102		Screw Bit (+) :101	
Screw Bit (-) :101			

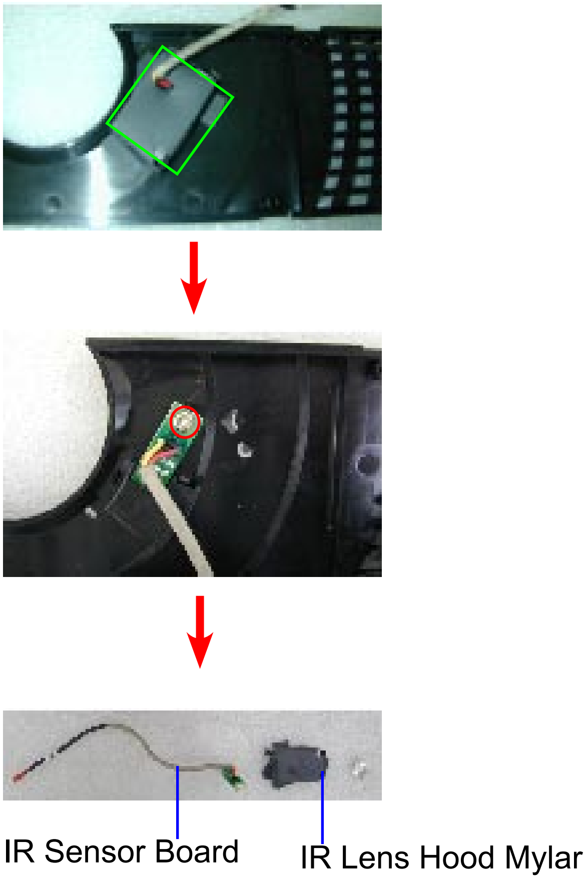
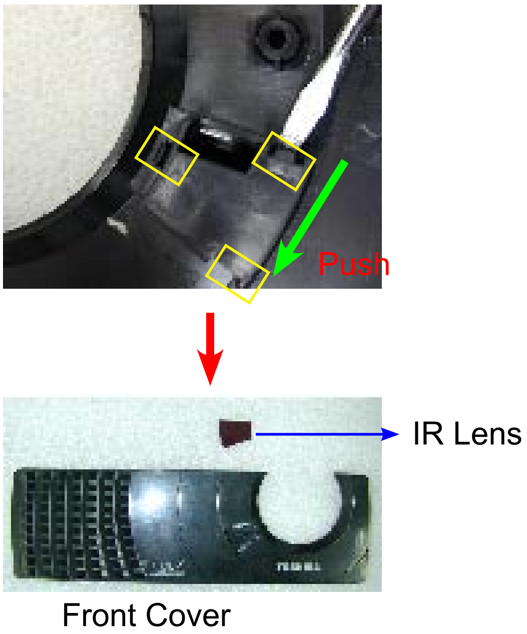
2-2 Disassemble Lamp, Keypad Board, Top Cover and Front Cover

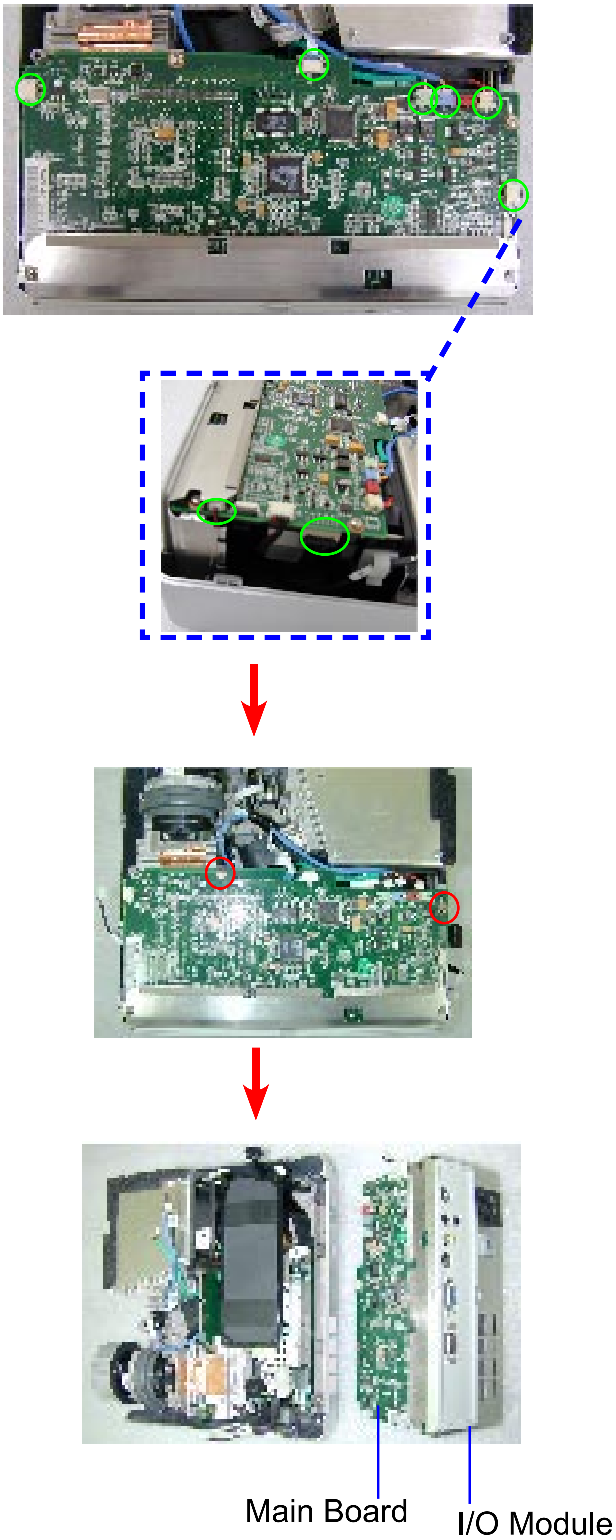
No	Procedure	Photo
1	Loosen 2 screws to remove the Lamp Cover	
2	Loosen 2 screws to remove Lamp Module	  Lamp Lamp Cover
3	Unscrew 1 screw and press the left tenon (A) on the lower cover first and then press the right one (B) on the lower cover to pull the bilateral sides to remove Top Cover.	  Top Cover

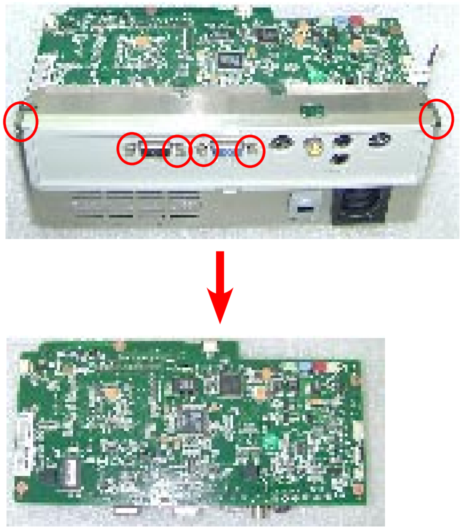
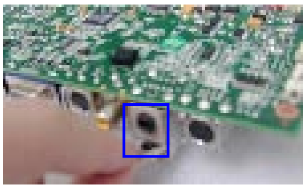
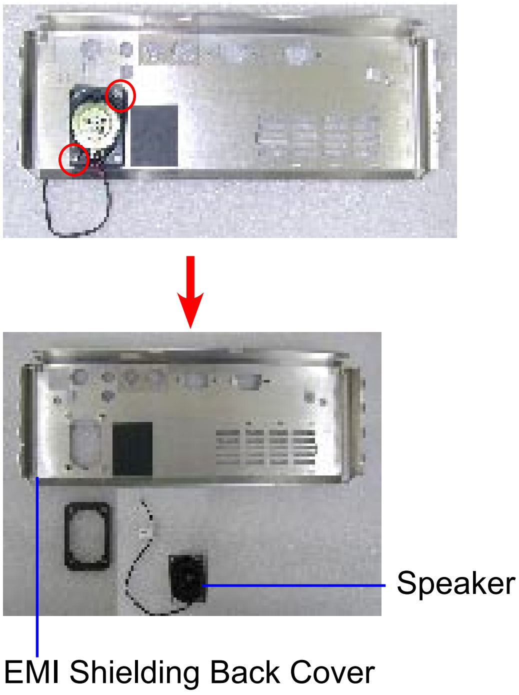
No	Procedure	Photo
4	Tear off the mylar first. Unplug the FFC cable and unscrew 4 screws to remove Keypad Button, Enter Key and Keypad Board.	  Keypad Button  Keypad Board FFC Cable  Enter Key  Keypad Cap  Top Cover
5	Unscrew 2 screws to remove Top Cover Shielding.	  Top Cover Shielding

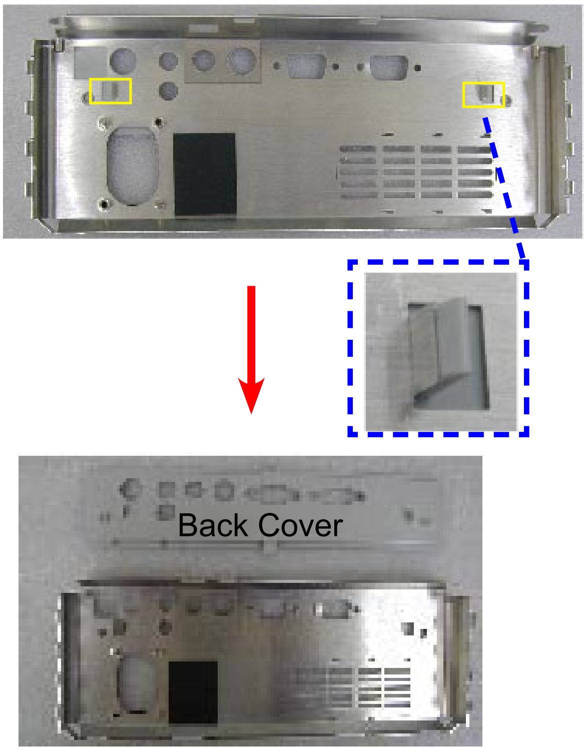
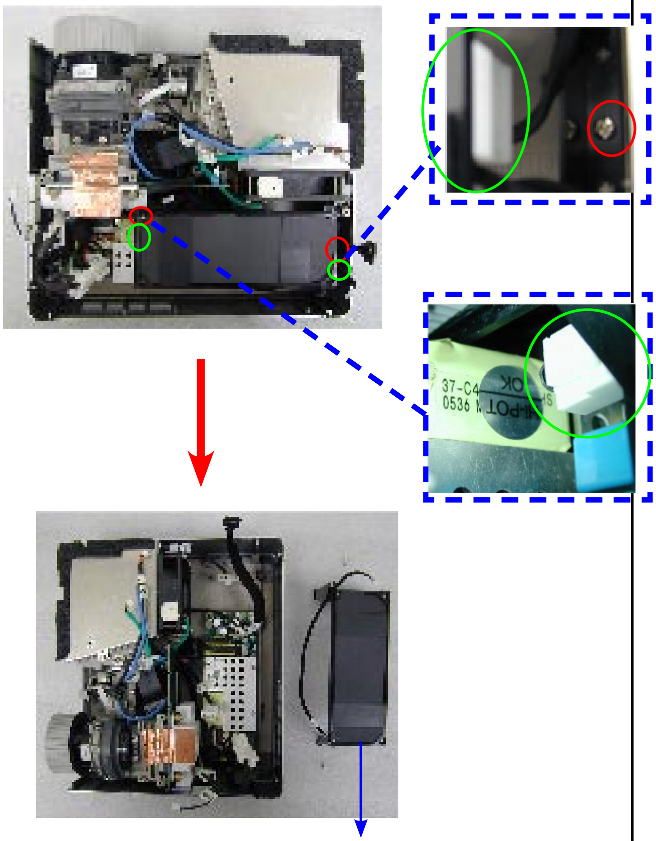
No	Procedure	Photo
6	Unscrew 2 screws to remove Lamp Plate.	  Lamp Iron Plate
7	Unplug the red connector from Main Board, unscrew 1 screw and pull Buttom Cover outwards and pull forward Front Cover to remove it.	  

2-3 Disassemble IR Sensor Board, Main Board, I/O Module, Speaker, Back Cover and Lamp Driver

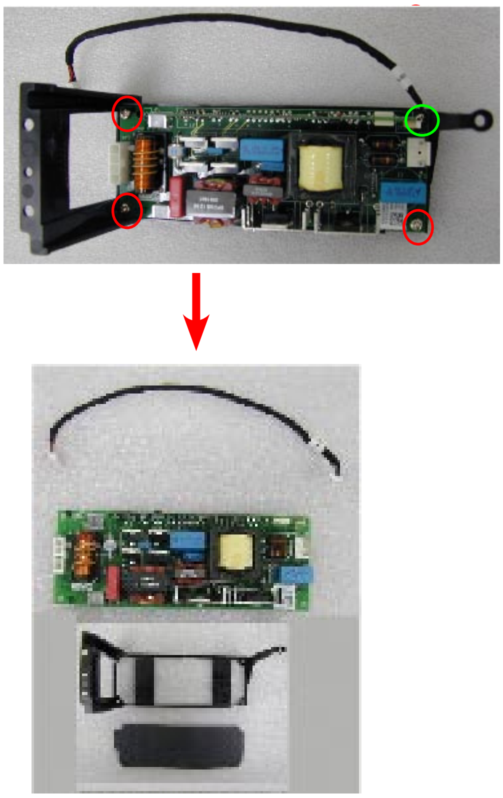
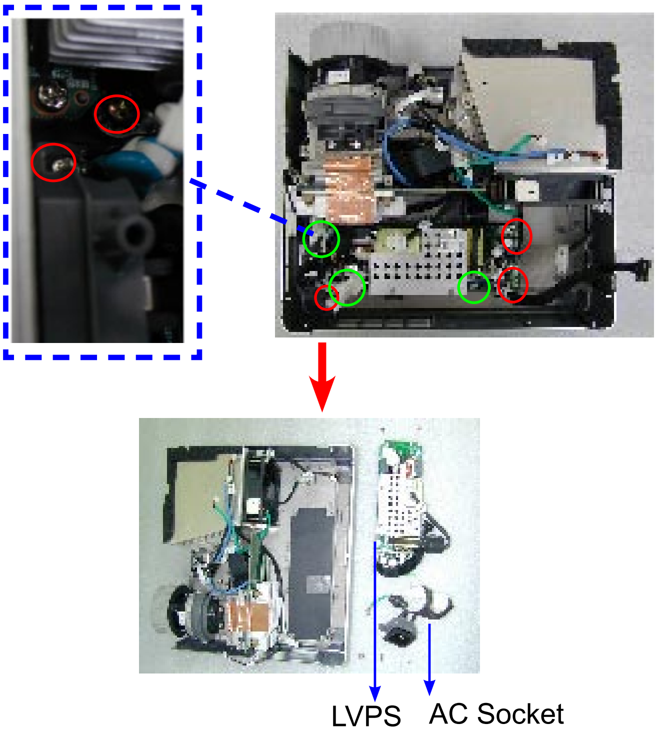
No	Procedure	Photo
1	Take off the maylar first, unscrew 1 screw to remove IR Sensor Board.	 IR Sensor Board IR Lens Hood Mylar
2	Push the three tenons to remove IR Lens and Front Cover.	 Push IR Lens Front Cover

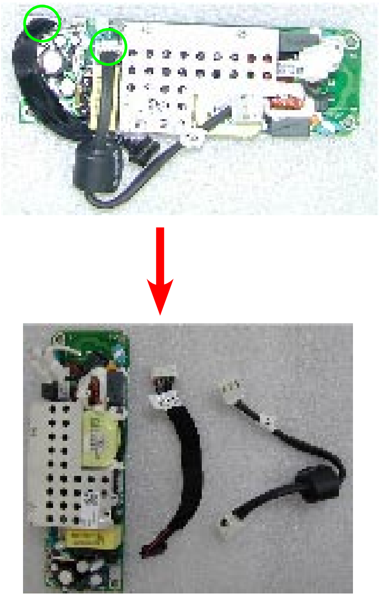
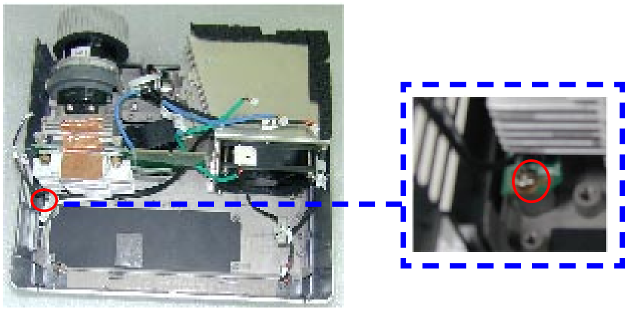
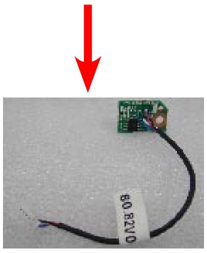
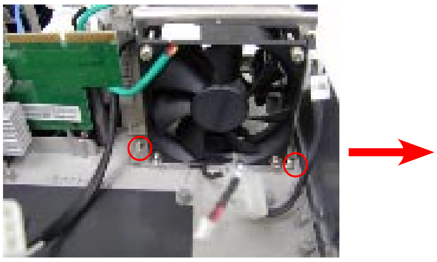
No	Procedure	Photo
3	Unplug 8 connectors and unscrew 2 screws to separate Main Board and I/O Module from the unit..	 Main Board I/O Module

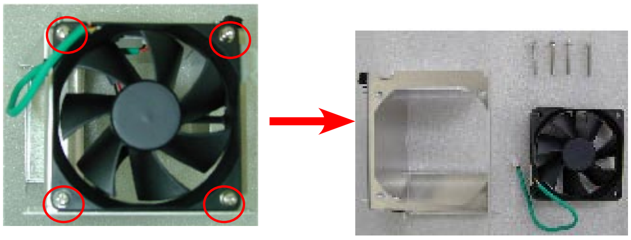
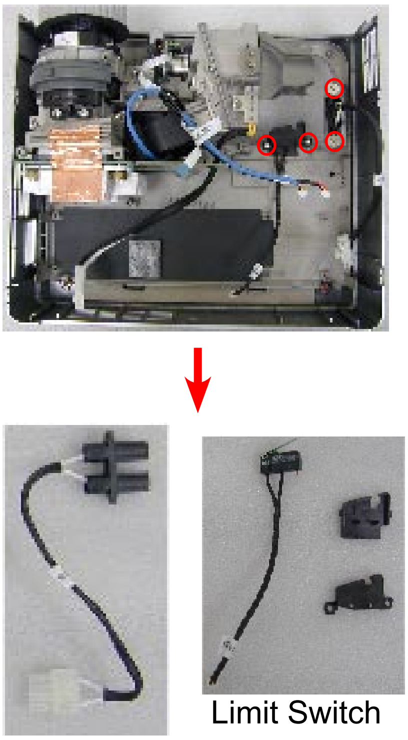
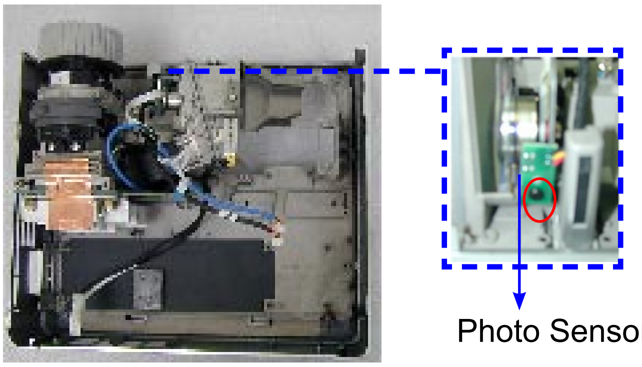
No	Procedure	Photo
4	Unscrew 2 screws and 4 hex screws to separate Main Board and I/O Module.	  Notice: Please re-attach EMI gasket to the position shown in the red circle again after replacing Main Board.
5	Unscrew 2 screws to remove Speaker Sponge and Speaker from EMI Shielding Back Cover.	 Speaker EMI Shielding Back Cover

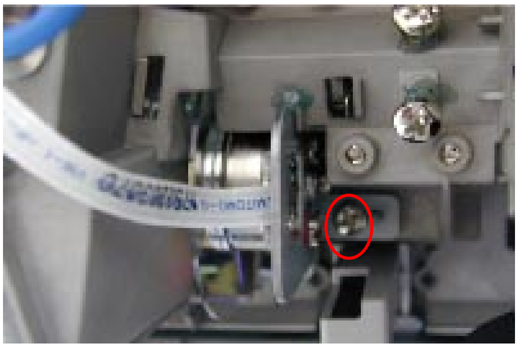
No	Procedure	Photo
6	Push the tenons (in yellow circle) to remove Back Cover from EMI Shielding Back Cover.	 EMI Shielding Back Cover
7	Unscrew 2 screws and unplug 2 connectors to remove Lamp Driver Module.	 Lamp Driver Module

2-4 Disassemble Lamp Driver Module, LVPS, Thermal Sensor, Fan Module, Photo Sensor and Color Wheel

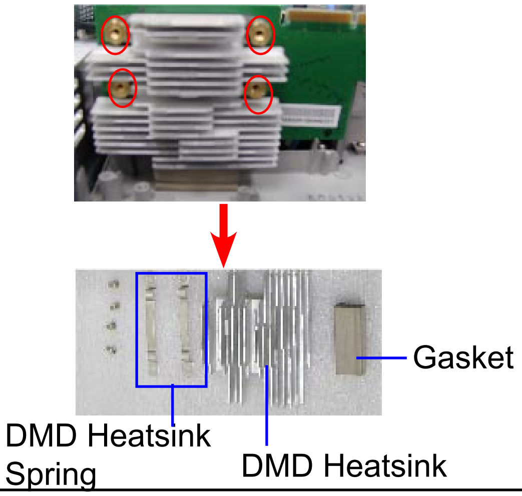
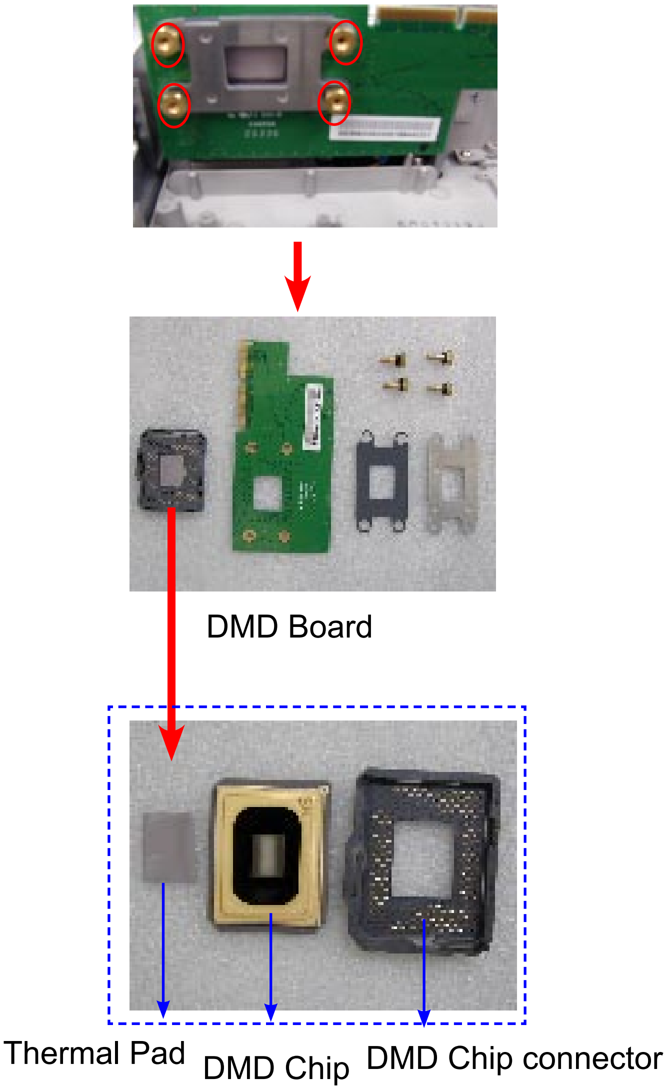
No	Procedure	Photo
1	Unscrew 4 screws and unplug one connector to separate Lamp Driver from Lamp Driver Holder and the connector.	 Lamp Driver Module
2	Unscrew 5 screws and unplug 3 connectors to remove LVPS and AC Socket.	

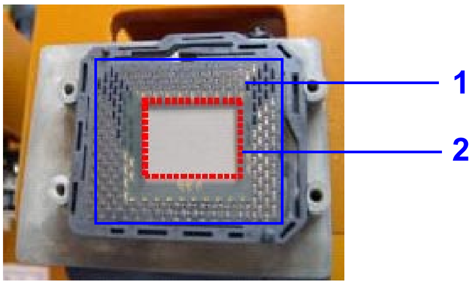
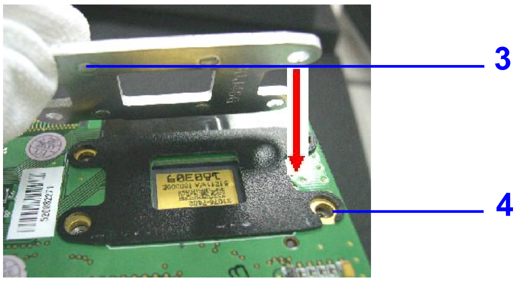
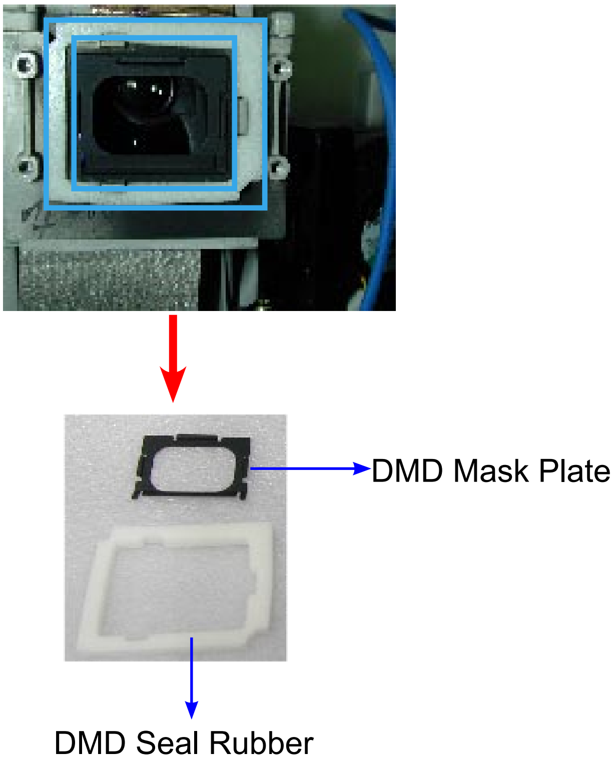
No	Procedure	Photo
3	Unplug 2 connectors to remove 2 pin connector and 14 pin connector from LVPS.	
4	Unscrew 1 screw to remove Thermal Sensor Board.	  Thermal Sensor Board
5	Unscrew 2 screws to remove Fan Module.	 Fan Module

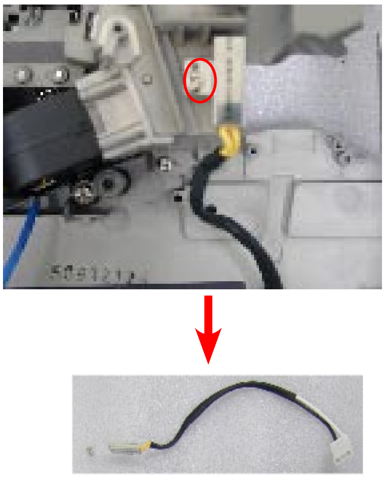
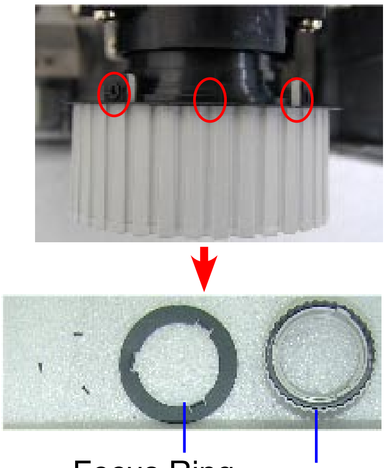
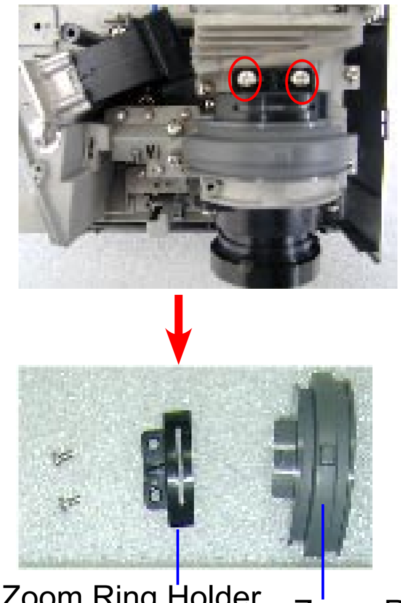
No	Procedure	Photo
6	Unscrew 4 screws to break down Fan module.	
7	Unscrew 4 screws to remove Lamp Cable and Limit Switch.	 Limit Switch Lamp Driver Cable
8	Unscrew 1 screw to remove Photo Sensor.	 Photo Sensor

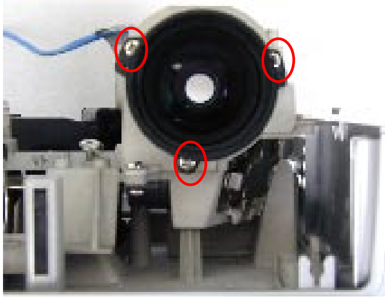
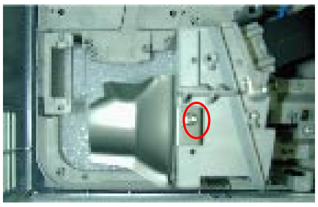
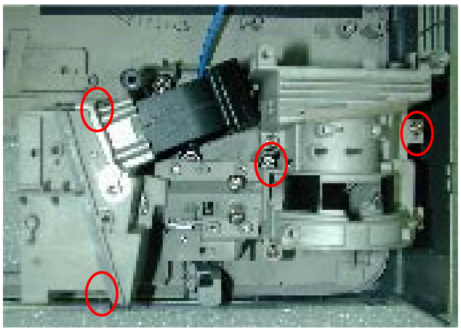
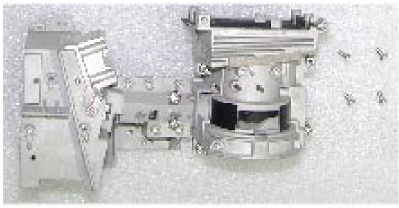
No	Procedure	Photo
9	Unscrew 1 screw to remove Color Wheel. Note: be careful not to scratch Color Wheel while removing.	 Color Wheel

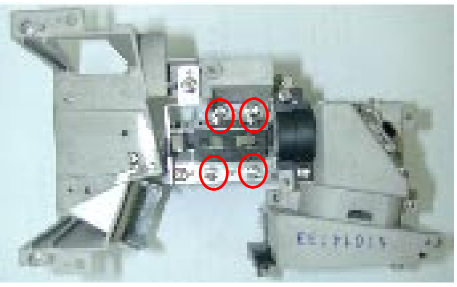
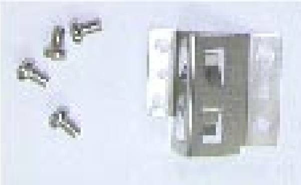
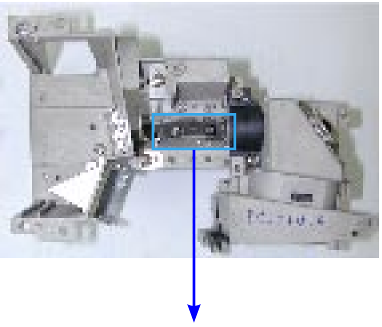
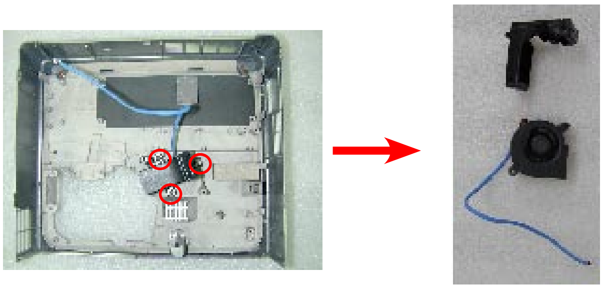
2-5 Disassemble DMD Board, DMD Chip, Thermal Switch, Focus Ring, Zoom Ring, Engine Module, Blower Fan and Elevator

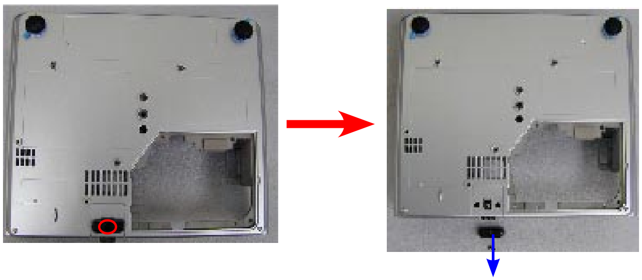
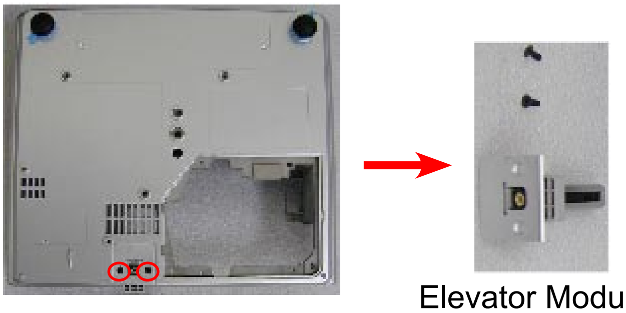
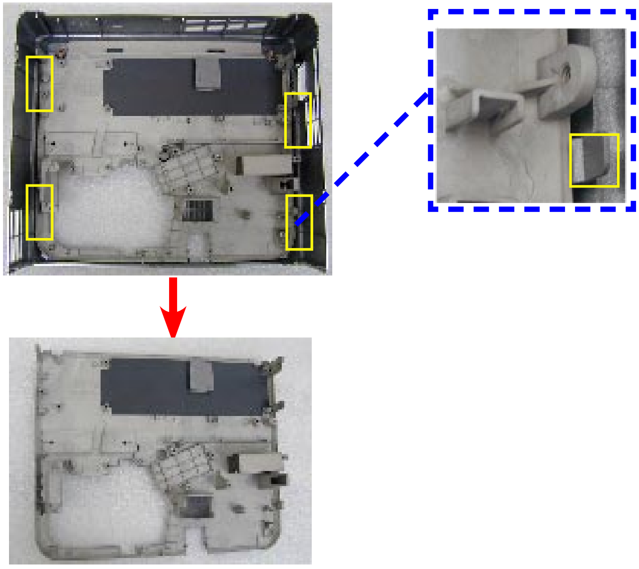
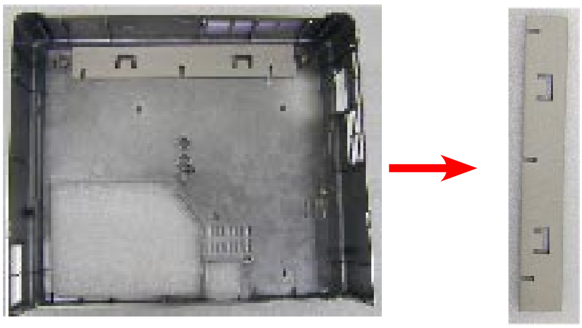
No	Procedure	Photo
1	Unscrew 4 screws to remove DMD Heatsink and DMD Heatsink Spring.	 Gasket DMD Heatsink Spring DMD Heatsink
2	Unscrew 4 hex screws to remove DMD Module and DMD Board.	 DMD Board Thermal Pad DMD Chip DMD Chip connector

No	Procedure	Photo
2	Assembly Notice: 1. Check if DMD pins are broken or tilted and if there is any remnant or dirt. 2. Please stick Thermal Pad in the middle of DMD socket (shown in red circle) and the edge of tape cannot touch DMD socket. 3. Protruding facet faces down (towards the insulation Maylar) 4. Insulation Mylar gap face right	 
3	Remove DMD Seal Rubber and DMD Mask Plate.	

No	Procedure	Photo
4	Unscrew 1 screw to remove Thermal Switch.	 Thermal Switch
5	Unscrew 3 screws to remove Focus Ring Lightcut Mylar and Focus Ring.	 Focus Ring Lightcut Maylar Focus Ring
6	Unscrew 2 screws to remove Zoom Ring and Zoom Ring Holder.	 Zoom Ring Holder Zoom Ring

No	Procedure	Photo
7	Unscrew 3 screws to remove Projection Lens.	 Projection Lens
8	Unscrew 1 screw to remove Lamp Lightcut Top.	 Lamp Lightcut Top
9	Unscrew 4 screws to remove Engine Frame.	  Engine Frame

No	Procedure	Photo
10	Unscrew 4 screws to remove Rod Fix Plate and then Rod can be removed.	  Rod Fix Plate  Rod
11	Unscrew 3 screws to remove Blower Fan Module.	 Blower Fan

No	Procedure	Photo
12	Unscrew 1 screw to remove Elevator Foot	 Elevator Foot
13	Remove 2 screws to remove Elevator Module.	 Elevator Module
14	Loosen 4 tenons (in yellow circle) to remove Bottom Cover Shielding.	 Bottom Cover Shielding
15	Tear off EMI Bottom Gasket from Bottom Cover.	 Bottom Cover EMI Bottom Gasket

Troubleshooting

Equipment Needed

- PC or pattern generator
- DVD player (Video, S-Video, Audio)
- Pattern generator: Quantum Data 802B or CHROMA 2327
- After changing parts, check the below information.

Adjustment Needed (after parts replacement & FW upgrade)

For example, after replacing Main Board, you need to do ADC and Video Calibration, and adjust Color Wheel Index. For details, please see Chapter 4.

Charge Parts/Update	Color Wheel Index	ADC Calibration	Video Calibration	Reset Lamp Use Time
M/B	v	v	v	
Color Wheel	v			
Lamp Module				v

LED Lighting Message

Normal Operation

Status \ Light	TEMP	POWER	LAMP
Standby	OFF	ON(O)	OFF
Normal(Power ON)	OFF	ON(O)	OFF
Powering up	OFF	Blink(G)	OFF
Cooling	OFF	Blink(O)	OFF
FW Programming mode	ON(R)	Blink(O)	ON(R)

(R) -- RED

(O) -- ORANGE

(G) -- GREEN

Error Status

Status \ Light	TEMP	POWER	LAMP	Remark	Troubleshooting
LAMP(not lit)	OFF	ON(R)	ON(R)	after 5 sec. goto Standby	Check: 1. Lamp; 2. Lamp Driver; 3. M/B
LAMP(door open)	OFF	ON(R)	Blink(R)		Check: 1. Lamp Door; 2. Limit Switch
OVER Temp	ON(R)	ON(R)	OFF		Check: 1. Thermal Switch; 2. Thermal Sensor; 3. Fans; 4. M/B
FAN LOCK	Blink(R)	ON(R)	OFF		Check: 1. Fans; 2. M/B
CW ERROR	Blink(R)	ON(R)	Blink(R)		Check: 1. Color Wheel; 2. M/B

Main Procedure

No Power (No LED is lit)

- Ensure that the power cord and AC power outlet are properly connected.
- Ensure that all connectors are securely connected and aren’t broken.
- Check Keypad Board
- Check Keypad Cable
- Check LVPS
- Check Main Board

Auto Shut Down

- Check LED Status : refer to LED Lighting Message

  a. Check Color Wheel

  - Check color wheel

  - Photo sensor

  b. No Power

  - Refer to “No Power” troubleshooting

No Image \ No Display (but some LED is lit)

- Ensure that the signal cable and source work well. (If you connect multiple sources at the same time, use the “Input” button on the control panel to switch.)
- Ensure that all connectors are securely connected and aren’t broken.
- Check Lamp Door (refer to LED Lighting Message)
- Check Limit Switch (refer to LED Lighting Message)
- Check Thermal Switch (refer to LED Lighting Message)
- Check Thermal Sensor (refer to LED Lighting Message)
- Check Fans (refer to LED Lighting Message)
- Check Color Wheel (refer to LED Lighting Message)
- Check Lamp (refer to LED Lighting Message)
- Check Lamp Driver (refer to LED Lighting Message)
- Check Main Board
- Check DMD Board

Mechanical Noise

- Check Color Wheel
- Check Fan Module

Line Bar/Line Defect

- Sometimes it’s because of DMD chip and DMD board did not assemble properly
- Check DMD Board
- Check DMD Chip
- Check Main Board

Image Flicker

- Do “Reset” of the OSD Menu.
- Ensure that the signal cable and source work well.
- Check Lamp Module
- Check Photo Sensor
- Check Color Wheel
- Check DMD Board
- Check Main Board

Color Abnormal

- Do “Reset” of the OSD Menu.
- Adjust Color Wheel Index (See Chapter 4 for Color Wheel Index Adjusment)
- Do PC on Video Calibration (See Chapter 4 for Video Calibration)
- Check Main Board
- Check DMD Board
- Check Color Wheel

Poor Uniformity/Shadow

- Ensure the projection screen without dirt.
- Ensure the projection lens is clean.
- Ensure the Brightness is within spec.
  (Replace the Lamp if the Brightness is less than spec.)
- Check Engine Module

Dead Pixel/Dust (Out of spec.)

- Ensure the projection screen without dirt
- Ensure the projection lens is clean
- Clean DMD Chip and Engine Module
- Check DMD Chip
- Check Engine Module

Garbage Image

- Ensure that the signal cable and source work well.
- Check Main Board
- Check DMD Board

Remote Controllor or Control Panel Failure

- Remote Control
  a. Check Battery
  b. Check Remote Controller
  c. IR receiver
- Control Panel
  a. Check FPC (Keypad Cable)
  b. Check keypad
  c. Check Main Board

Function Abnormal

- Do “ Reset” of the OSD menu
- Check Main Board
- Check DMD board

Chapter 4

Function Test & Alignment Procedure

4-1 Test Equipment

- IBM PC with XGA and SVGA resolution (Color Video Signal & Pattern Generator)
- DVD player with Local Video System
- HDTV Tuner or Source (480i/p, 576 i/p, 720p, 1080i), equipped with "S-Video", "Component", "Composite" interface.
- Minolta CL-100 (Luminator)
- Patern Generator: Quantum Data 802B or CHROMA2327 (Suggested)

4-2 Test Condition

- Circumstance Brightness : Dark room less than 2.5 lux.
- Inspection Distance : 1.5m~3m for functional inspection
- Screen Size : 60 inches diagonal
- After repairing each projector, the unit should be burn-in (Refer to the table below).

Symptom	**Burn-in Time**
Normal Repair	2 Hours
NFF	4 Hours
Auto Shutdown	6 Hours

- Note: Enter Factory Mode to execute "Burn In test."
  (See page 4-7 or Appendix for hot keys)

4-3 Test Display Modes & Pattern

Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise by Rsync, Frequency or Tracking selection.	Figure 1
2	Contrast/Brightness	64 RGBW scale	Gray level should be distinguishable and without color abnormal.	Figure 2
3	R, G, B and White Color Performance	R, G, B and White Color	Each R, G, B color should be normal without color abnormal issue.	Figure 3~6
4	Screen Uniformity	Full White	Should be compliant with 60%.(Minimum)	Figure 6
5	Dead Pixel (Bright pixel)	Full Black	Cannot accept any bright pixel	Figure 7
	Dead Pixel (Dark pixel)	Full White	The numbers of dead pixel should be smaller or amount to 6 pixel.	Figure 8
6	Blemish (Bright)	Full Black / Gray 30	The bright blemish cannot be accepted if the problem appear with Gary 30 pattern.	Figure 7, 8
7	Blemish (Dark)	Full white / Blue 60	The dark blemish cannot be accepted if the problem appear with Blue 60 pattern.	Figure 6,9
8	Focus	Text Pattern	The text in the corner should be clear after adjust the focus ring.	Figure 10
9	Boundary	Boundary Frame	Horz. And Vert. position of video should be adjustable to be the screen frame.	Figure 11
10	Video Calibration	94% White	No discolor	Figure 12
11	ADC Calibration (PC Calibration)	Calibration Pattern	Calibration Pattern should be in full screen mode	Figure 13

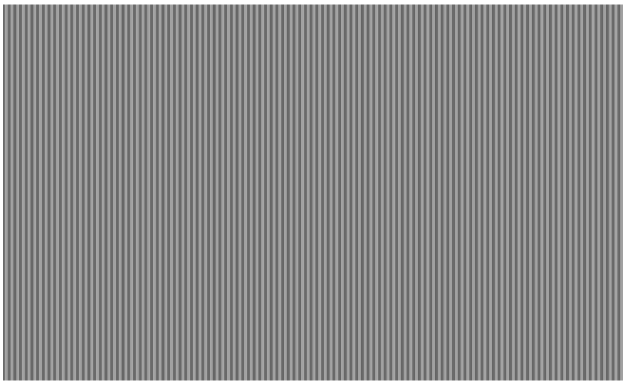


Figure 1. Fine Line Moire

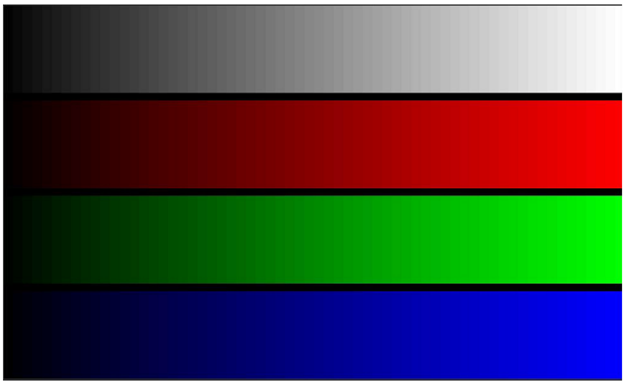


Figure 2. 64 RGBW Scale

Figure 3. Red Pattern

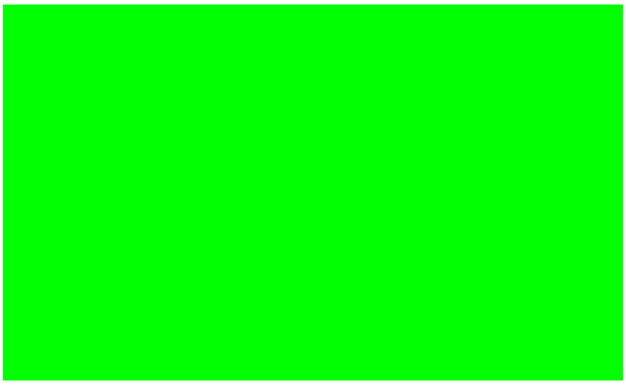


Figure 4. Green Pattern

Figure 5. Blue Pattern

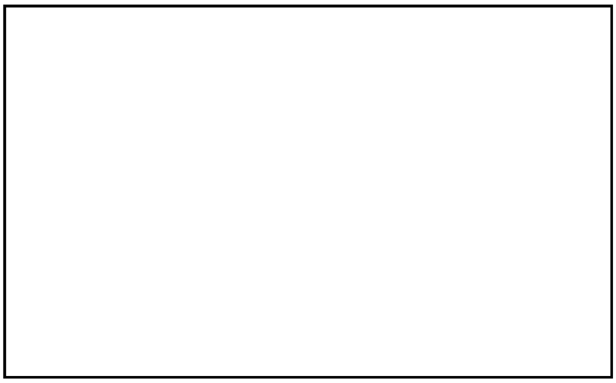


Figure 6. Full White

Figure 7. Full Black

Figure 8. Gary 30 Pattern

Figure 9. Blue 60 Pattern

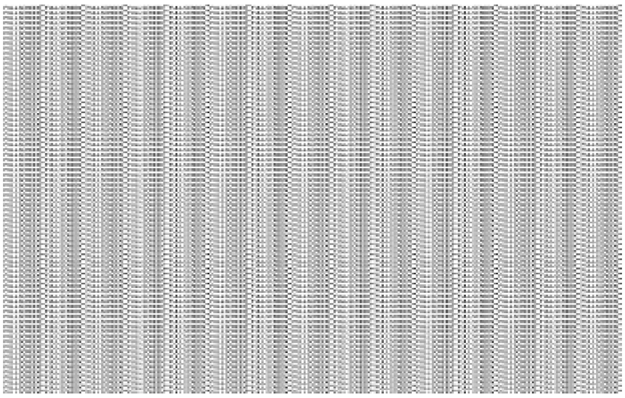


Figure 10. Text Pattern

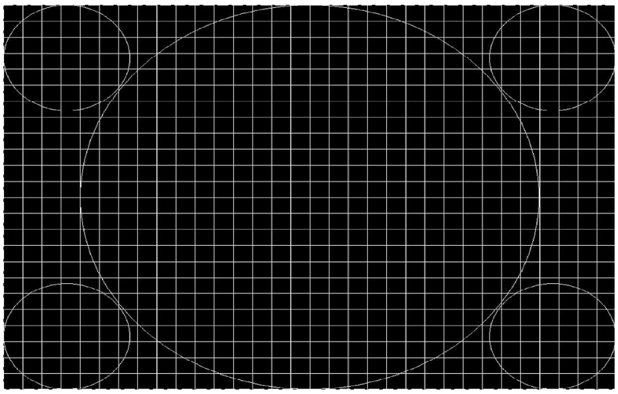


Figure 11. Boundary Frame

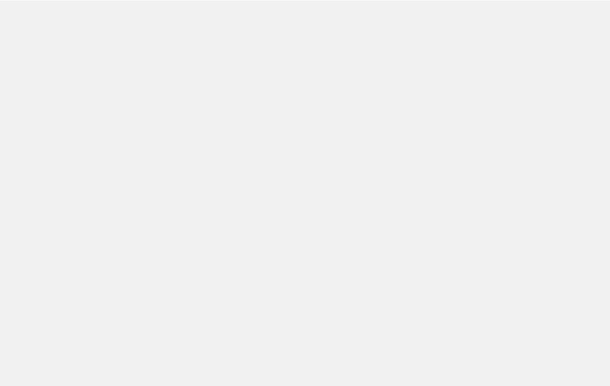


Figure 12. 94%white

Figure 13. Calibration Pattern

4-4 Inspection Procedure

Note: Do "Reset" in OSD menu before function test.

- **Frequency and Tracking**

  Test Signal : 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)

  Test Pattern : Line Moire Pattern

  * Check and see if image sharpness and focus are well performed.

  * If not, readjust by following steps.

  (1) Select "Frequency" function to adjust the total pixel number of pixel clock in one line period.

  (2) Then select "Phase" function and use right or left arrow key to adjust the value to minimize video flicker.

- **Boundary**

  Test Signal : 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)

  Test Pattern : Boundary Frame

  * Adjust Resync or adjust Frequency/H. Position/V. Position to the inner of the screen.

- **Focus**

  Test Signal : 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)

  Test Pattern : Text Pattern

  * Adjust the center clearly, meanwhile, one slightly vague corner in the image is allowed

Calibration in Factory Mode

(See Page 4-7 or Appendix for hotkeys)

After Main Board is changed, the calibration is needed to ensure good color performance.

- **Video Calibration**

  Test Signal : HDTV Signal (720p) (Plug in HDTV signal cable into VGA port)

  Test Pattern : Calibration Pattern (Figure 12)

  Get into Factory Mode to **execute video calibration.**

- **ADC Calibration (PC Calibration)**

  Test Signal : 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)

  Test Pattern : Calibration Pattern (Figure 13)

  * Enter Factory Mode to execute PC Calibration.

- Calibration Pattern should be in full screen mode, white above and black below.

- **DTV / HDTV**

  Equipment : CHROMA 2327 or DVD player

  Test Signal : 480i, 480p, 720P, 1080i

  Please ensure the projector can display DTV/HDTV signal without color or image abnormal.

  If the test result was discoloration or flickering, please return the unit back to the repair area.

- **Color Performance and contrast**

  Test Signal : 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)

  Test Pattern : 64 RGBW scale Pattern

  - Please check and ensure if each color is normal and distinguishable
  - If not,please adjust color Wheel index in the Factory mode. (See Page 4-7 or Appendix for hot keys.

- **Blemish (Bright)**

  Test signal: 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)
  Test Pattern: Gray 30 pattern

  - Please check and ensure the unit is within the spec.
    (The bright blemish should not be seen under Gray 30 pattern.)
  - If out of spec, please return the unit to repair area.

- **Blemish (Dark)**

  Test signal: 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)
  Test Pattern: Blue 60 pattern

  - Please check and ensure the unit is within the spec.
    (The dark blemish should not be seen under Blue 60 pattern.)
  - If out of spec, please return the unit to repair area.

- **Video**

  Test signal: Composite video, S-Video and Component Video
  Test Pattern: NTSC, PAL, SECAM

  - Please check and ensure the unit can display the video signal without color abnormal or image abnormal issue.
  - If out of spec, please return the unit to repair area.

- **Audio**
  - * Please check and ensure the function of audio works well. (Volume, Treble, Bass, Mute)
  - * If not, please return the unit to repair area.

- **Screen Uniformity**

  Test Signal : 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)

  Test Pattern : Full White Pattern

  - * Please check and ensure the unit is under the spec.
  - * Please check and see if it’s in normal condition.If not, please return the unit to repair area.
  - * The total numbers and distance of dead pixels should be complaint with the spec.

- **Dead Pixel (Bright/Dark pixel)**

  Test Signal : 1024x768@60Hz (T8/T9); 800x600@60Hz (S8)

  Test Pattern : Full Black Pattern and Full White Pattern

  (1) Bright Pixel :

  Test Pattern : Full Black Pattern

  -Please check and ensure that the unit cannot accept any bright pixel. (Suggested)

  -If not, please return the unit to repair area.

  (2) Dark Pixel :

  Test Pattern : Full White Pattern

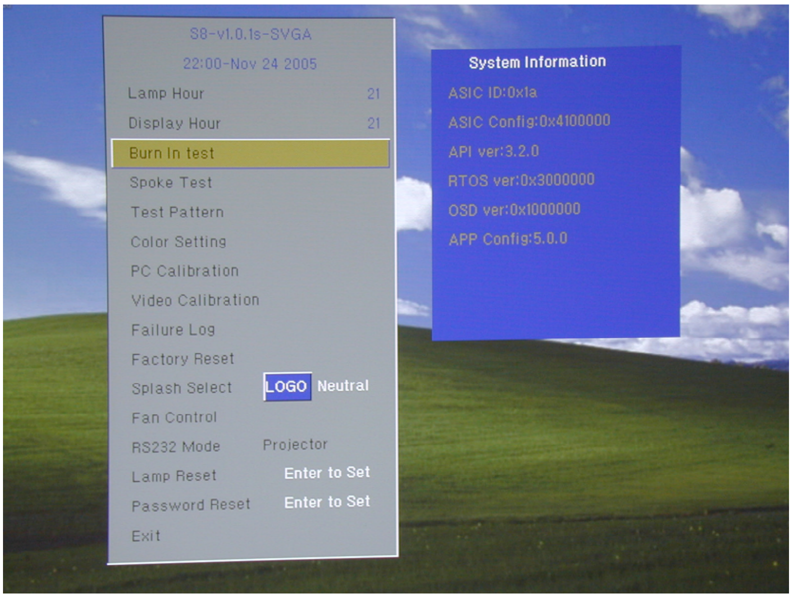
  -Please check and ensure that the pixel number should be less than 6 pixels (Suggested)

  -If not, please return the unit to repair area.

4-6 Guide to Entering Factory Mode and Reset in OSD

How to enter Factory Mode:

1. Must be with signal input.
2. Hot key: press “ON/STANDBY” “VOL-” “VOL-” “MENU” sequentially to enter Factory Mode. (See the below pic)


S8-v1.0.1s-SVGA
22:00-Nov 24 2005
Lamp Hour
Display Hour
Burn In test
Spoke Test
Test Pattern
Color Setting
PC Calibration
Video Calibration
Failure Log
Factory Reset
Splash Select
Fan Control
RS232 Mode
Lamp Reset
Password Reset
Exit
LOGO
Neutral
Enter to Set
Enter to Set

Lamp Hour 21
Display Hour 21
Splash Select LOGO
RS232 Mode Projector

System Information
ASIC ID:0x1a
ASIC Config:0x4100000
API ver:3.2.0
RTOS ver:0x3000000
OSD ver:0x1000000
APP Config:5.0.0

Reset in OSD

After final QC step, we have to erase all saved change again and restore the factory defaults.

Please enter the OSD mode to do the "Reset" then choose "YES" and press enter to see if it works.

This action will allow you to erase all end-user's settings and restore the original setting.

Chapter 5

Firmware Upgrade Procedure

5-1 Equipment Needed

Software :

- DLP Composer Lite
- Firmware (S8/T8/T9) (*.img file)

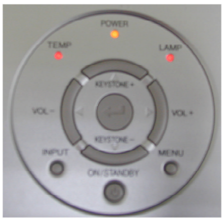
Note: The FW upgrade procedure for T9/T8/S8 is the same. Here, we take S8 as an example.

Hardware :

Item	Photo	Item	Photo
Projector (S8/T8/T9)		8-pin RS232 Cable	 Note: This cable is the same as T90 & T90A/MT200/MT400 series.
Power Cord		PC or Laptop	

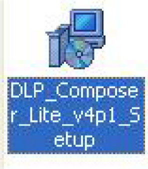
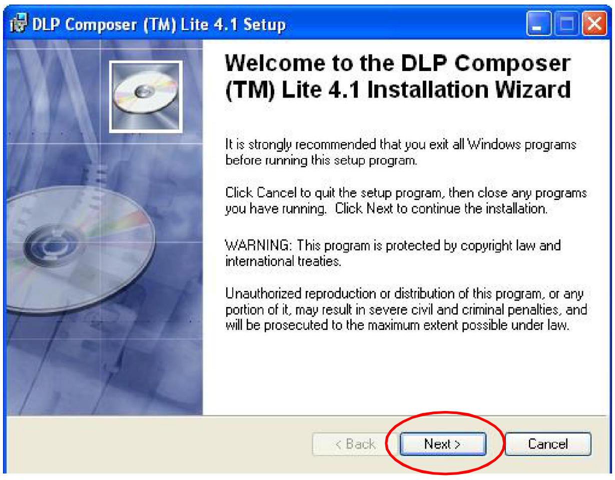
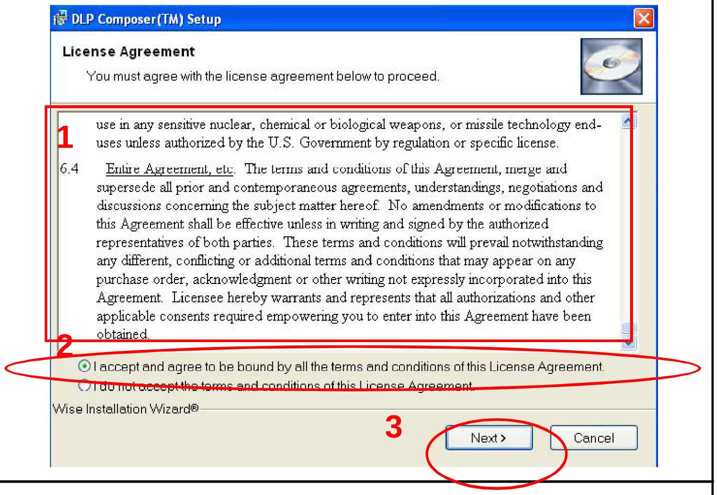
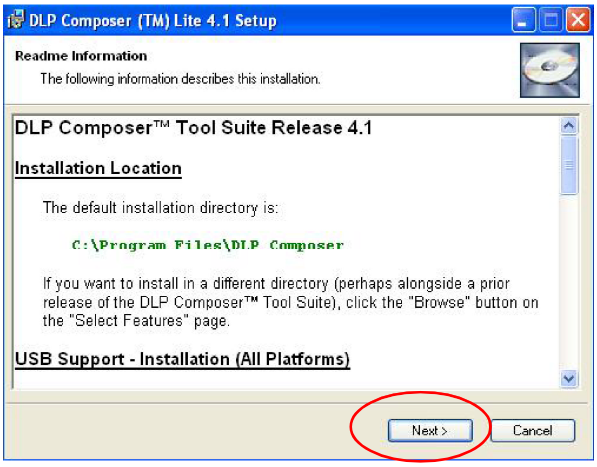
Connection:
Connect the serial port of your PC on laptop with the “Control” port of S8 by the 8-pin RS232 cable.

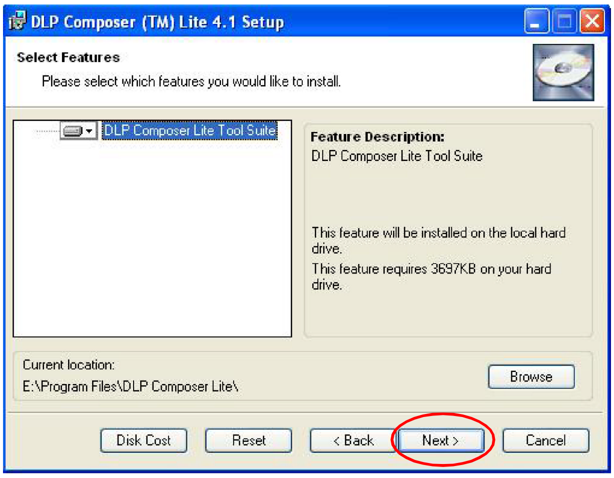
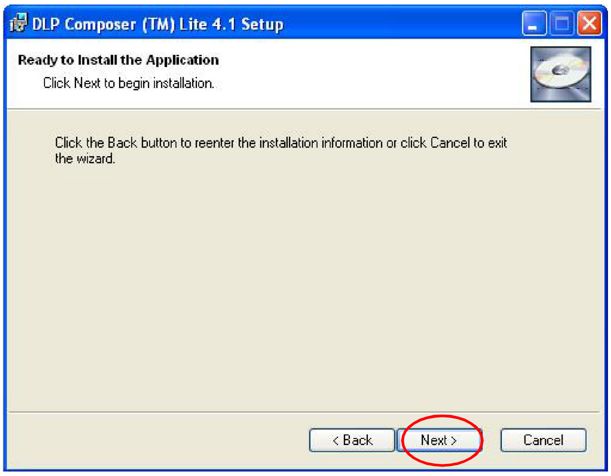
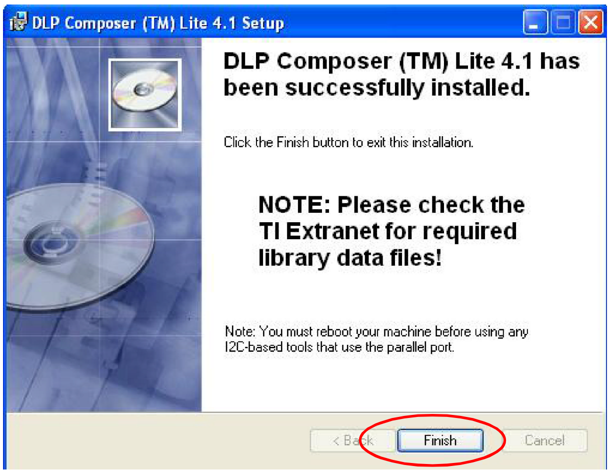
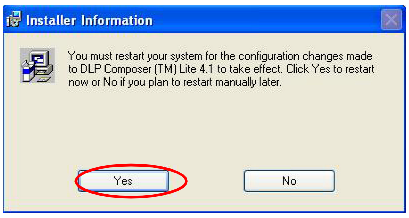
FW Upgrade Mode:
Press and hold “INPUT” and “MENU” buttons of S8 and plug in the power cord to S8. Release “INPUT” and “MENU” buttons after TEMP, POWER & LAMP LEDs are all lit.



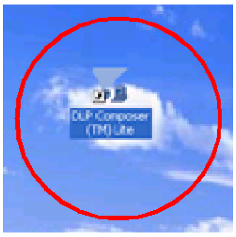
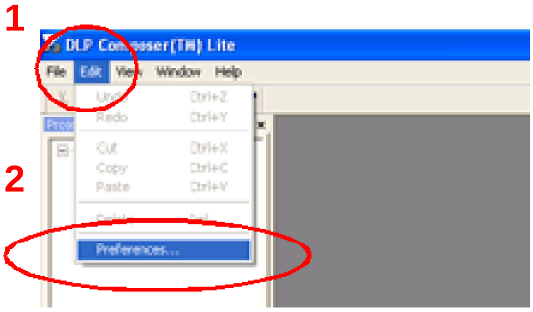
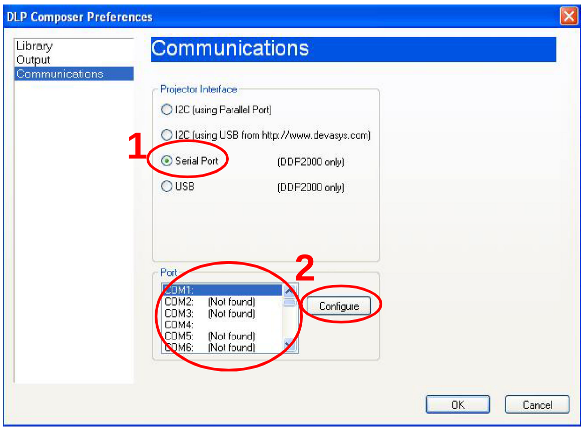
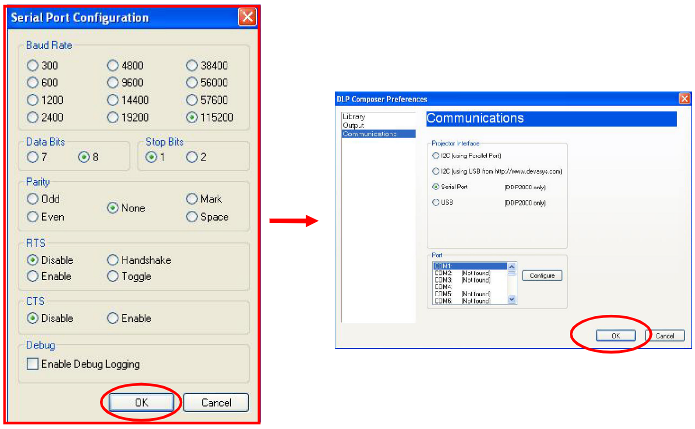
5-2 Installation Procedure

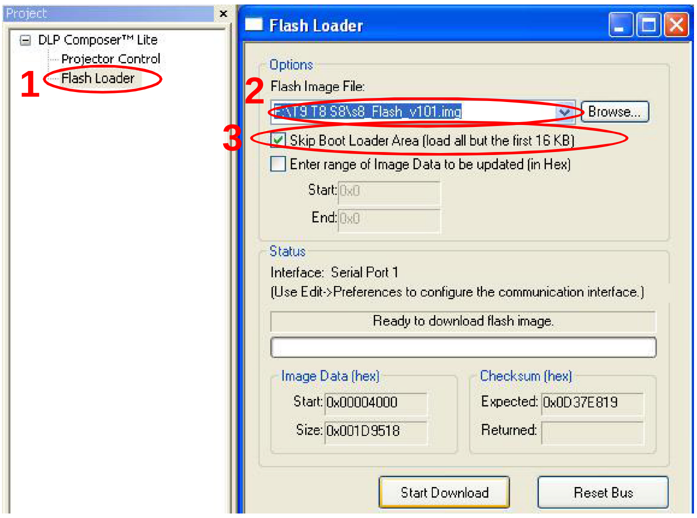
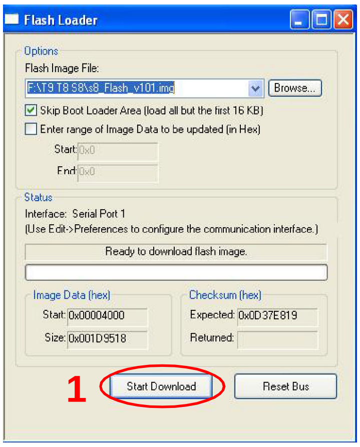
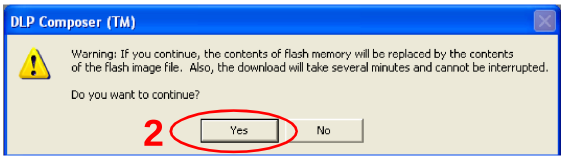
5-2.1 DLP Composer Lite Installation Procedure (Must use Ver. 4.1)

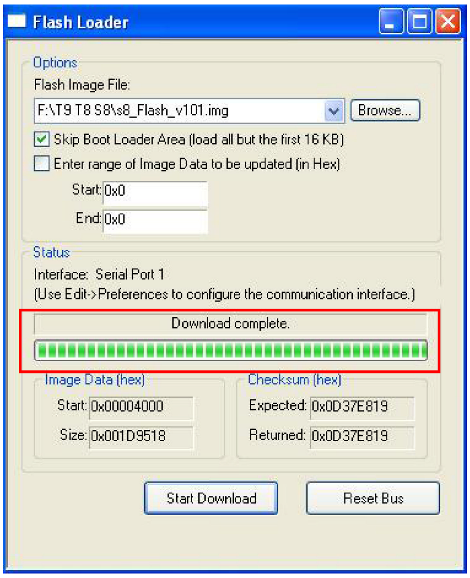
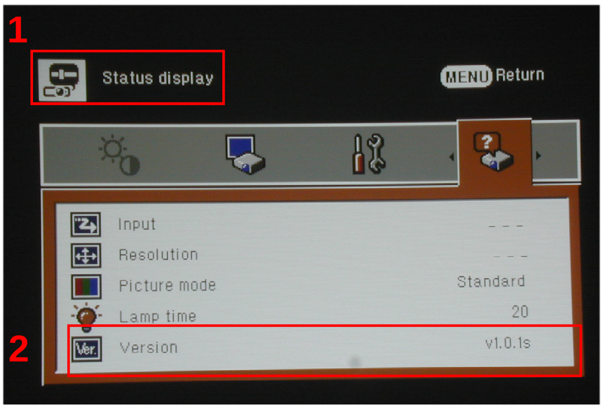
No	Step	Procedure	Photo
1	DLP Composer Lite Installation file	Choose "DLP Composer Lite v4.1 Setup" program.	 DLP_Composer_Lite_v4p1_Setup
2	Next	Click "Next" button.	 DLP Composer (TM) Lite 4.1 Setup **Welcome to the DLP Composer (TM) Lite 4.1 Installation Wizard** It is strongly recommended that you exit all Windows programs before running this setup program. Click Cancel to quit the setup program, then close any programs you have running. Click Next to continue the installation. WARNING: This program is protected by copyright law and international treaties. Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
3	Next	1. Reading the "License Agreement" rules. 2. Choose "I accept and agree to be bound by all the terms and conditions of this License Agreement" icon, 3. Click "Next" button.	 DLP Composer(TM) Setup **License Agreement** You must agree with the license agreement below to proceed. 1 use in any sensitive nuclear, chemical or biological weapons, or missile technology end-uses unless authorized by the U.S. Government by regulation or specific license. 6.4 Entire Agreement, etc. The terms and conditions of this Agreement, merge and supersede all prior and contemporaneous agreements, understandings, negotiations and discussions concerning the subject matter hereof. No amendments or modifications to this Agreement shall be effective unless in writing and signed by the authorized representatives of both parties. These terms and conditions will prevail notwithstanding any different, conflicting or additional terms and conditions that may appear on any purchase order, acknowledgment or other writing not expressly incorporated into this Agreement. Licensee hereby warrants and represents that all authorizations and other applicable consents required empowering you to enter into this Agreement have been obtained. 2 ● I accept and agree to be bound by all the terms and conditions of this License Agreement. ○ I do not accept the terms and conditions of this License Agreement. Wise Installation Wizard® 3
4	Next	Click ""Next"" button.	 DLP Composer (TM) Lite 4.1 Setup **Readme Information** The following information describes this installation. DLP Composer™ Tool Suite Release 4.1 Installation Location The default installation directory is: `C:\Program Files\DLP Composer` If you want to install in a different directory (perhaps alongside a prior release of the DLP Composer™ Tool Suite), click the "Browse" button on the "Select Features" page. USB Support - Installation (All Platforms)

No	Step	Procedure	Photo
5	Next	1. Click "Next" button.	 DLP Composer (TM) Lite 4.1 Setup **Select Features** Please select which features you would like to install. **Feature Description:** DLP Composer Lite Tool Suite This feature will be installed on the local hard drive. This feature requires 3697KB on your hard drive. Current location: E:\Program Files\DLP Composer Lite\ DLP Composer Lite Tool Suite Browse Disk Cost Reset < Back Next > Cancel
6	Next	Click "Next" button.	 DLP Composer (TM) Lite 4.1 Setup **Ready to Install the Application** Click Next to begin installation. Click the Back button to reenter the installation information or click Cancel to exit the wizard.
7	Finish	Press "Finish" button.	 DLP Composer (TM) Lite 4.1 Setup **DLP Composer (TM) Lite 4.1 has been successfully installed.** Click the Finish button to exit this installation. **NOTE: Please check the TI Extranet for required library data files!** Note: You must reboot your machine before using any I2C-based tools that use the parallel port.
8	Reboot	Click "Yes" button to reboot.	 Installer Information You must restart your system for the configuration changes made to DLP Composer (TM) Lite 4.1 to take effect. Click Yes to restart now or No if you plan to restart manually later.

5-3 Firmware Upgrade Procedure

No	Step	Procedure	Photo
1		Execute the "DLP Composer^{TM}" file.	 DLP Composer (TM) Lite
2		Click "Edit" and "Preferences".	 1 2 DLP Composer(TM) Lite File Edit View Window Help Undo Ctrl+Z Redo Ctrl+Y Cut Ctrl+X Copy Ctrl+C Paste Ctrl+V Preferences...
3		1. Select "Edit\Preferences\ Communications" and choose "Serial Port". 2. Click the serial port connected. Here we select COM1. 3. Press "Configure"	DLP Composer Preferences Library Output Communications Communications Projector Interface ○ I2C (using Parallel Port) ○ I2C (using USB from http://www.devasys.com) ● Serial Port (DDP2000 only) ○ USB (DDP2000 only) Port COM1: COM2: (Not found) COM3: (Not found) COM4: COM5: (Not found) COM6: (Not found) 1 2 Configure OK Cancel
4		1. Make sure the setting is same as the left picture shows. 2. Press "OK"	Serial Port Configuration Baud Rate ○ 300 ○ 4800 ○ 38400 ○ 600 ○ 9600 ○ 56000 ○ 1200 ○ 14400 ○ 57600 ○ 2400 ○ 19200 ● 115200 Data Bits: ○ 7 ● 8 Stop Bits: ● 1 ○ 2 Parity ○ Odd ○ Even ● None ○ Mark ○ Space RTS ● Disable ○ Enable ○ Handshake ○ Toggle CTS ● Disable ○ Enable Debug ☐ Enable Debug Logging OK Cancel DLP Composer Preferences Communications Configure OK Cancel

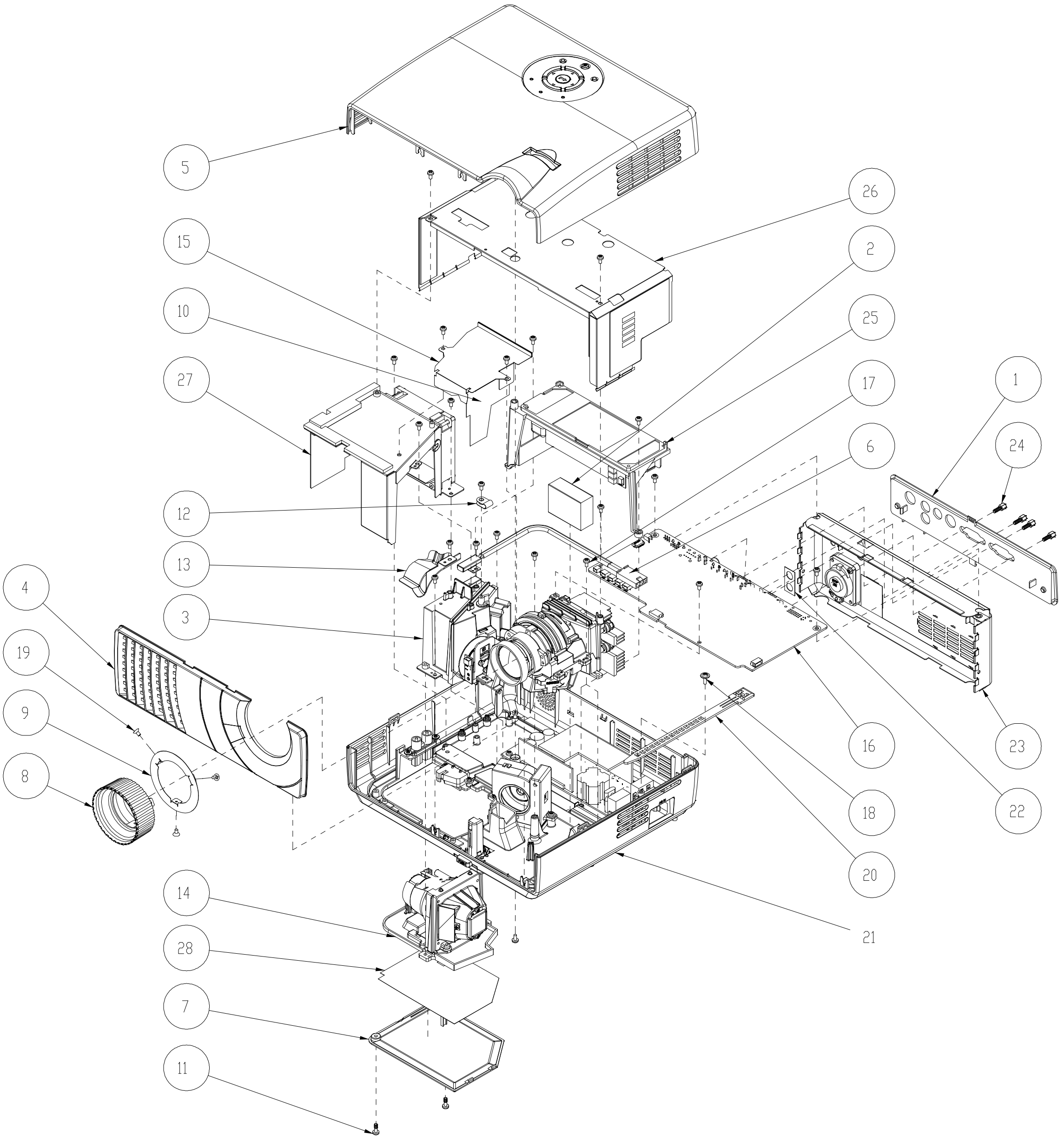
No	Step	Procedure	Photo
5		1. Choose "Flash Loader" 2. Click "Browse" to search the S8 Firmware. (*.img.file) 3. Select the item "Skip Boot Loader Area (load all but the first 16KB)."	 Flash Image File: F:\T9 T8 S8\s8_Flash_v101.img ☑ Skip Boot Loader Area (load all but the first 16 KB) ☐ Enter range of Image Data to be updated (in Hex) Start: 0x0 End: 0x0 Interface: Serial Port 1 (Use Edit->Preferences to configure the communication interface.) Ready to download flash image. Image Data (hex) Start: 0x00004000 Size: 0x001D9518 Checksum (hex) Expected: 0x0D37E819 Returned: Project DLP Composer™ Lite Projector Control Flash Loader 1 Flash Loader Options 2 Browse... 3 Status Start Download Reset Bus
6		1. If the firmware is ready, click "Start Download" to process the firmware upgrade. 2. Click "Yes" to continue.	 Flash Image File: F:\T9 T8 S8\s8_Flash_v101.img ☑ Skip Boot Loader Area (load all but the first 16 KB) ☐ Enter range of Image Data to be updated (in Hex) Start: 0x0 End: 0x0 Interface: Serial Port 1 (Use Edit->Preferences to configure the communication interface.) Ready to download flash image. Image Data (hex) Start: 0x00004000 Size: 0x001D9518 Checksum (hex) Expected: 0x0D37E819 Returned: Flash Loader Options Browse... Status 1 Start Download Reset Bus  DLP Composer (TM) Warning: If you continue, the contents of flash memory will be replaced by the contents of the flash image file. Also, the download will take several minutes and cannot be interrupted. Do you want to continue?

No	Step	Procedure	Photo
7	"Download Complete" Message	After the firmware is successfully loaded, you will see "Download Complete" message and only the Power LED is lit (Standby Mode). (The FW upgrade will take about 6 minutes.) Unplug and re-plug the power cord of the projector.	 Flash Loader Options Flash Image File: F:\T9 T8 S8\s8_Flash_v101.img Browse... ☑ Skip Boot Loader Area (load all but the first 16 KB) ☐ Enter range of Image Data to be updated (in Hex) Start: 0x0 End: 0x0 Status Interface: Serial Port 1 (Use Edit->Preferences to configure the communication interface.) Download complete. Image Data (hex) Start: 0x00004000 Size: 0x001D9518 Checksum (hex) Expected: 0x0D37E819 Returned: 0x0D37E819 Start Download Reset Bus
8	Checking Firmware Version	Power on the projector and press "MENU" button to launch OSD menu. Select "Status display" to check the firmware version	 1 Status display MENU Return Input - - - Resolution - - - Picture mode Standard Lamp time 20 Version v1.0.1s 2

Appendix A

Exploded Overview (S8)

I. S8 Unit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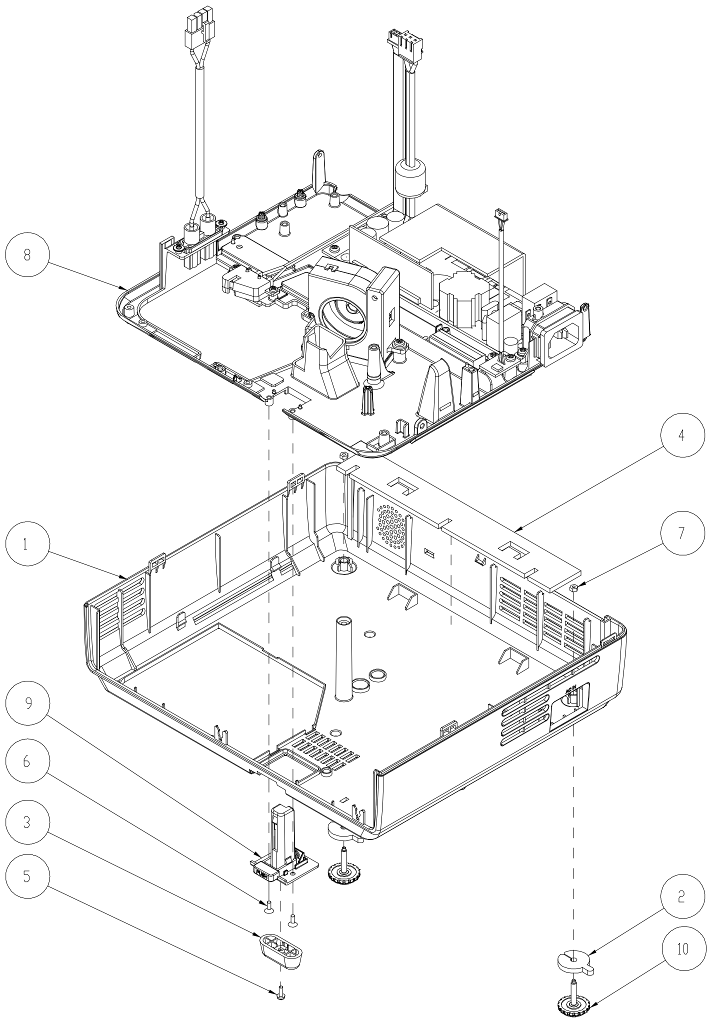
Exploded Parts List

Item	PART_NO	Description
1	51.83U04G011	BACK COVER PC+ABS-CA08 TDP-S8
2	41.82G14G001	EMI GASKET W15*L40*H30mm EP719
3	70.83V13G001	ASSY ENGINE MODULE TDP-S8
4	70.83U05G001	ASSY FRONT COVER MODULE TDP-T9
5	70.83V07G001	ASSY TOP COVER MODULE TDP-S8
6	43.83U01G002	KLIXON YS11 THERMAL SWITCH AND ADD CORE
7	51.83U05G001	LAMP COVER PC+ABS-CA07 TDP-T9
8	51.83U17G001	FOCUS RING PC+ABS-CA08 TDP-T9
9	51.83U18G001	FOCUS RING LIGHTCUT MYLAR TDP-T9
10	51.83U21G001	FRONT PLATE MYLAR FORMEX-GK-10 TDP-T9
11	61.00061G001	LOCK SCREW PAN MECH M3*8.5-3.5 Ni
12	61.00079G001	GROUNDING CABLE CLAMP FN-008 "PINGOOD
13	61.82G12G001	LAMP LIGHTCUT TOP FOR E19 AL 0.6t EP7190
14	70.83V01G001	ASSY LAMP MODULE TDP-S8
15	75.83U06G001	BUY ASSY EMI FRONT PLATE TDP-T9
16	80.83V01G001	PCBA MAIN BOARD TDP-S8 SVGA
17	85.1A123G050	SCREW PAN MECH M3*5 Ni
18	85.TA123G060	SCREW CAP TAP M3*6 Ni
19	85.YA321G052	SCREW FLAT HEAD TAP M1.7*5 D2.5 BLACK
20	51.00097G001	STRAP TIE PST-2 PE
21	70.83V09G001	ASSY BOTTOM HOUSING MODULE TDP-S8
22	41.83L01G001	EMI Gasket 12.7mm*25mm 0.5t TDP-T90A
23	70.83U08G001	ASSY EMI SHIELDING BACK COVER MODULE TDP-T9
24	85.005AGG408	SCREW HEX I/O #4-40 H4*L8 NI NYLOK
25	70.83U04G001	ASSY LAMP DRIVER MDULE TDP-T9
26	75.83A02G001	BUY ASSY EMI SHIELDING TOP COVER DP718
27	70.83U18G001	ASSY AXIAL FAN MODULE TDP-T9
28	61.82G28G002	LAMP COVER AL FOIL 0.1t EP719

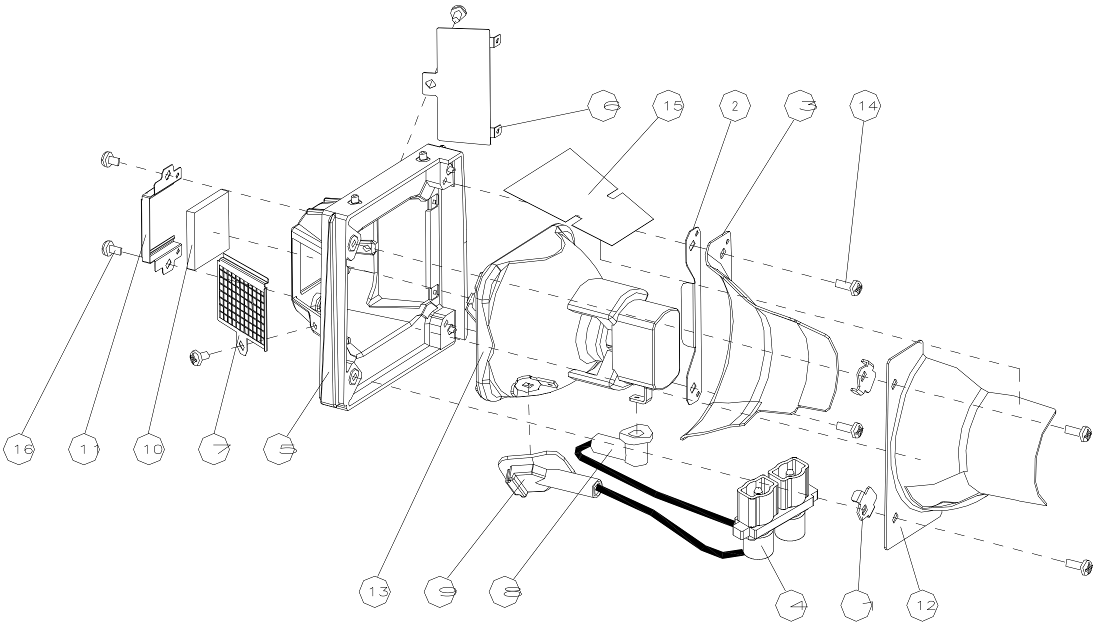
II. BOTTOM HOUSING MODULE



Exploded Parts List

Item	PART_NO	Description
1	51.83U02G011	BOTTOM COVER PC+ABS-CA08 TDP-S8
2	52.80S04G001	ADJUST FOOT SPACER 3.0t RUBBER BLUE TDP-T90
3	51.82G16G001	ELEVATOR FOOT PC+ABS C6200 EP7190 "GREEN'
4	41.83U03G001	EMI BOTTOM GASKET FOR TDP-T9
5	85.1A326G060	SCREW PAN HEAD MECH M2.6*6 BLACK
6	85.4A126G060	SCREW FLAT THED MECHINE M2.6*6
7	86.00122G015	NUT HEX M2.0*0.4P L15 Ni
8	70.83U10G001	ASSY BASE PLATE MODULE TDP-T9
9	70.83V12G001	ASSY ELEVATOR MODULE TDP-S8
10	70.83U20G001	ASSY ADJUST FOOT MODULE TDP-T9

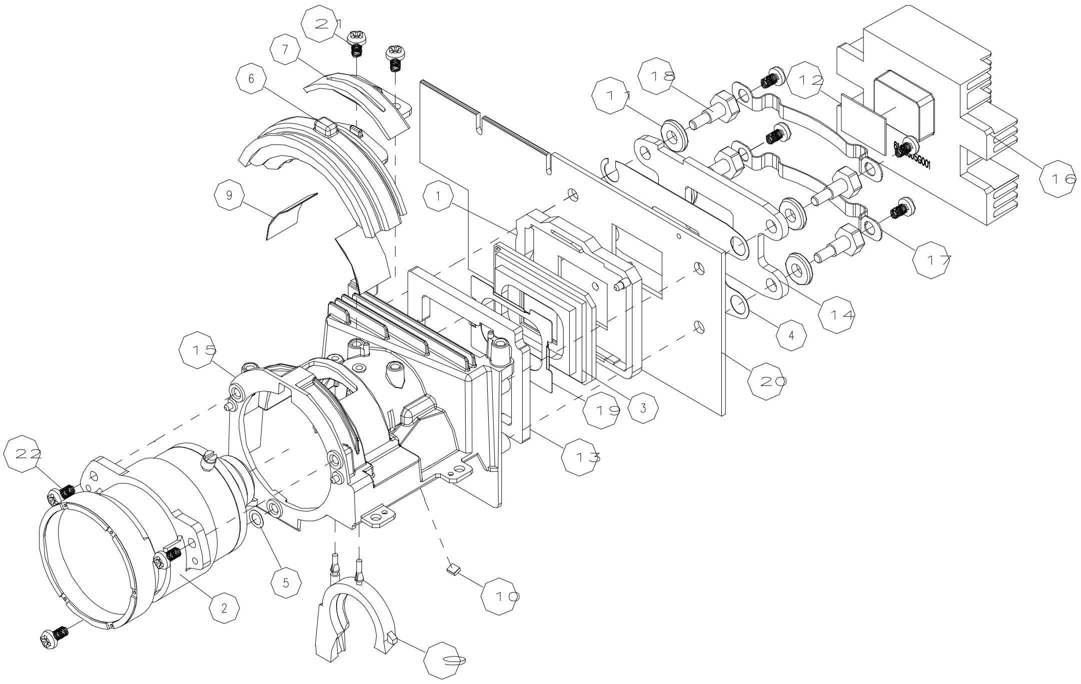
III. LAMP HOLDER MODULE



Exploded Parts List

Item	PART_NO	Description
1	61.88506G001	LAMP BRACKET 2 SUS301 0.3t 220
2	61.80S10G001	LAMP BRKT-1 SUS301 TDP-T90
3	61.83U03G001	LAMP LIGHTCUT SIDE FOR E17.5 T
4	76.81A01G003	BUY ASSY WIRE 2P#22 200C 6KV B
5	61.83U01G001	LAMP HOLDER FOR E17.5 LAMP AL
6	61.82G26G001	LAMP E19 MESH REAR SUS301 0.2t
7	61.83U04G001	LAMP E17.5 MESH FRONT SUS301 0
8	52.80J26G001	LAMP RUBBER VULCAN-1
9	52.85902G011	LAMP CONTACT COVER RUBBER 300
10	23.83U10G001	LAMP COVER GLESS 18*18*2.75 mm
11	61.83U06G001	COVER GLASS PLATE SUS301 0.2t
12	61.83U05G001	LAMP REFRACTOR MESH 0.6t TDP-T
13	23.83V15G001	OSRAM 200W E17.5 N-TYPE,GRADE
14	85.1A526G060	SCREW PAN MECH M2.6*6 Ni NYLOK
15	51.83U22G001	LAMP KAPTON MYLAR 0.1t TDP-T9
16	85.1A126G030	SCREW PAN MECH M2.6*3 Ni

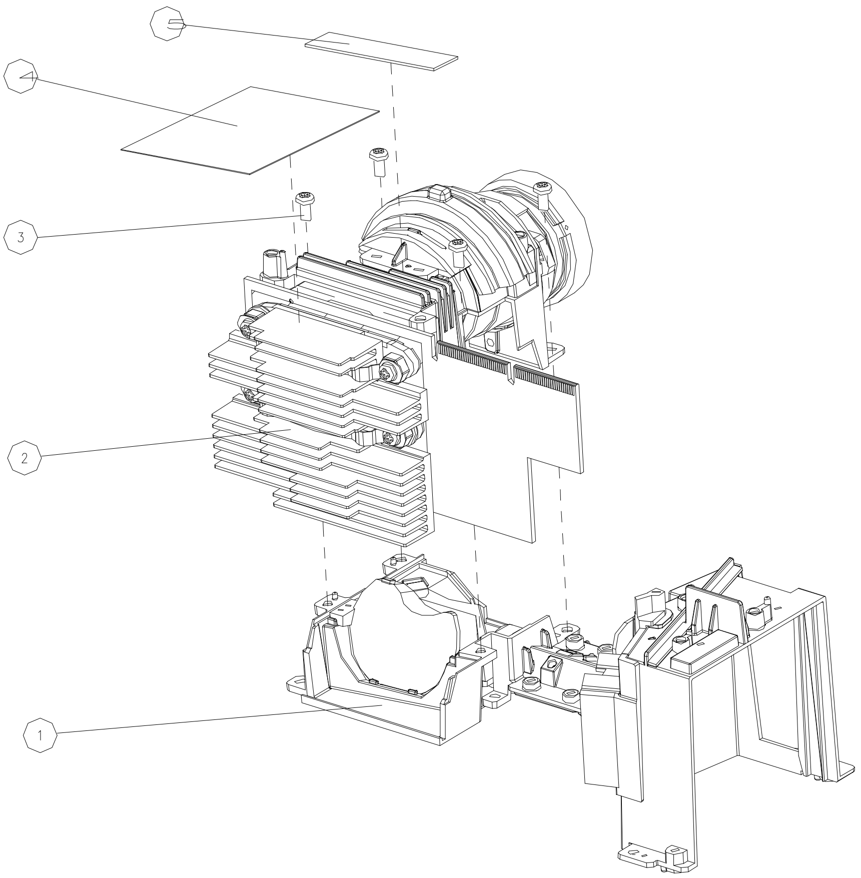
IV. ENGINE TOP COVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	11.009F0G005	CNNT F 166P FOR 0.55" SVGA LGA DMD SOCKET;FOXCONN
2	23.83V01G001	NITTOH WT70 PROJECTION LENS
3	48.859DMGD13	DMD 800*600 PIXEL DDR FTP 0.55
4	51.80B31G002	DMD INSULATOR MYLAR 0.435t T90
5	61.83U10G001	WASHER AL FOIL + ELECTRIC CONDUCT TAPE 0.2t TDP-T9
6	51.82G07G001	ZOOM RING PC+ABS C6200 EP7190 "GREEN"
7	51.82G08G001	ZOOM RING ORBIT PC+ABS C6200 EP7190 "GREEN"
8	51.82G22G001	ZOOM ANTI-ABRASION TEFLON EP7190 "GREEN"
9	52.82G03G002	RELAY SEALED RUBBER-2 EP719
10	52.82G10G001	RELAY CUSHION RUBBER EP7190 "GREEN"
11	52.87130G001	RUBBER BLOWER 595925 "GREEN"
12	52.87319G001	DMD THERMAL PAD 18*13*0.5t "GREEN"
13	52.89627G002	DMD SEAL RUBBER BF1000 3.2t EP719
14	61.80J48G002	DMD HEATSINK BACKER PLATE A6061 739
15	61.82G02G001	ENGINE TOP COVER Mg Alloy-AZ91D EP7190
16	61.83A03G001	DMD HEATSINK AL 1070 DP718
17	61.88608G001	DMD HEATSINK SPRING PLATE SUS301 0.4t Ivy10X
18	61.88611G001	DMD SCREW Ivy10X "GREEN"
19	61.89643G001	DMD MASK PLATE SUS301 0.15t EP759
20	80.82G02G001	PCBA DMD BOARD EP7190
21	85.1A123G050	SCREW PAN MECH M3*5 NI
22	85.1A123G060	SCREW PAN MECH M3*6 Ni

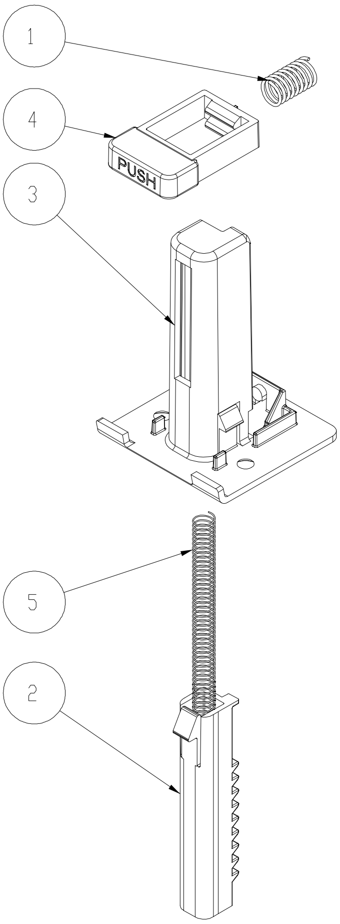
V. ENGINE MODULE



Exploded Parts List

Item	PART_NO	Description
1	70.83U14G001	ASSY ENGINE BOTTOM COVER MODUL TDP-T9
2	70.83V15G001	ASSY ENGINE TOP COVER MODULE TDP-T9
3	85.1A123.050	SCREW PAN MECH M3*5 NI
4	41.82K09G001	EMI TAPE 30*50mm
5	41.82K13G001	EMI GASKET W5*H1*L35mm

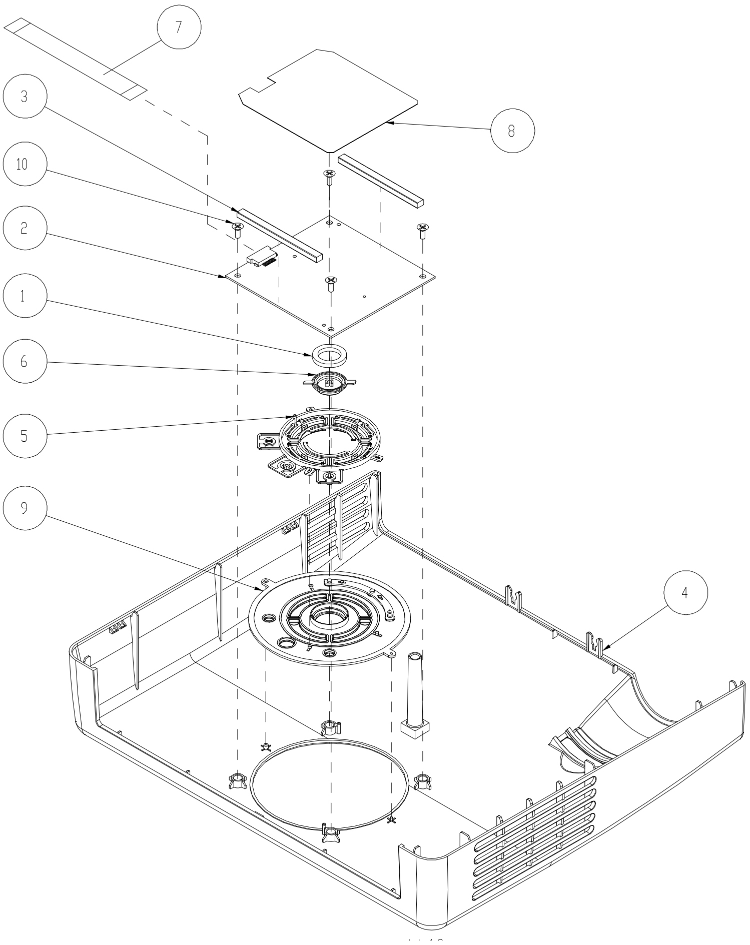
VI. ELEVATOR MODULE



Exploded Parts List

Item	PART_NO	Description
1	61.85913G001	ELEVATOR SPRONG SUS304 EP910
2	61.86814G001	ELEVATOR EXTEND SPRING PD120
3	51.83U10G011	ELEVATOR BASE PC+ABS-CA08 TDP-S8
4	51.83U11G011	ELEVATOR PUSH BUTTON PC+ABS-CA08 TDP-S8
5	61.86814G001	ELEVATOR EXTEND SPRING PD120

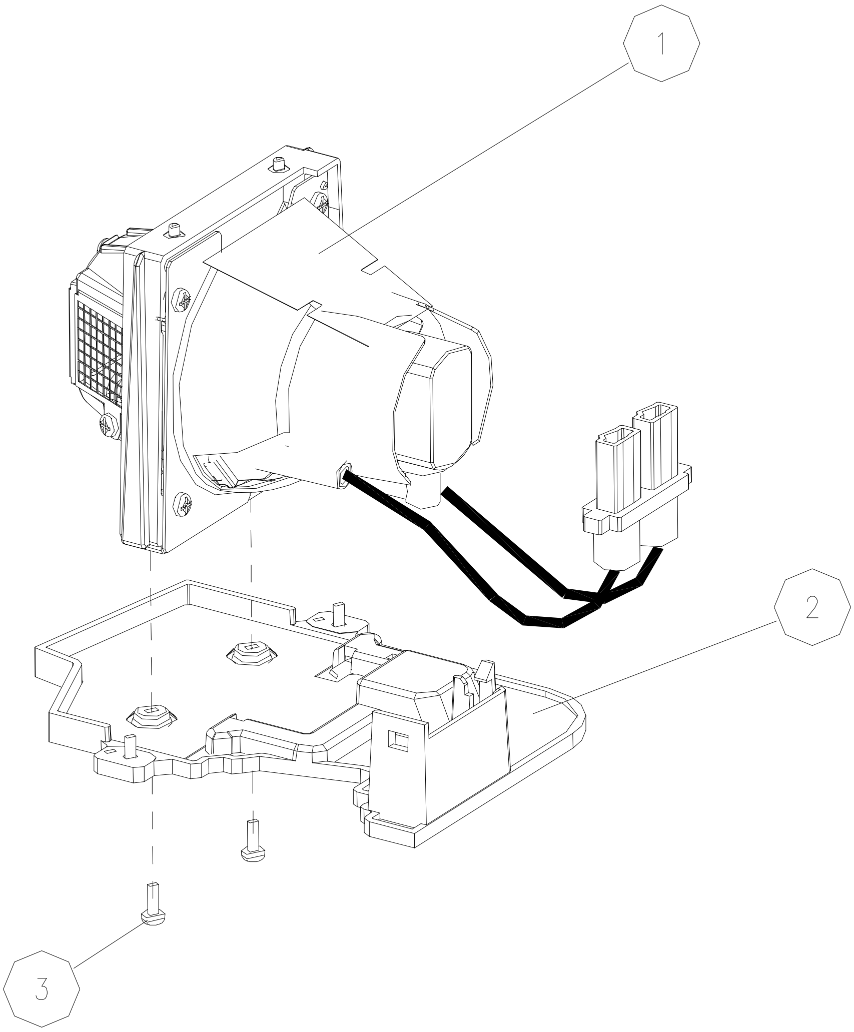
VII. TOP COVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	52.80S02G001	ENTER KEY SPRING PE FORM 2.0t TDP-T90
2	80.83U03G001	PCBA KEYPAD BOARD TDP-T9
3	41.80V22G001	EMI GASKET 4*3&51mm S15E
4	51.83U01G012	TOP COVER PC+ABS CS-CA08 TDP-S8
5	51.83U07G001	KEY PAD BUTTON PC+ABS-CA08 TDP-T9
6	51.83U19G001	ENTER KEY PAD PC+ABS-CA08 TDP-T9
7	42.82G02G003	FFC Cable 14P 100mm EP719
8	51.83U13G001	KEY PAD BOARD INSULATOR MYLAR 0.125t TPD-T9
9	75.83V05G001	BUY ASSY KEY PAD CAP TDP-S8
10	85.0A126G040	SCREW DOUBLE FLAT MECH M2.6*4Ni

VIII. LAMP MODULE

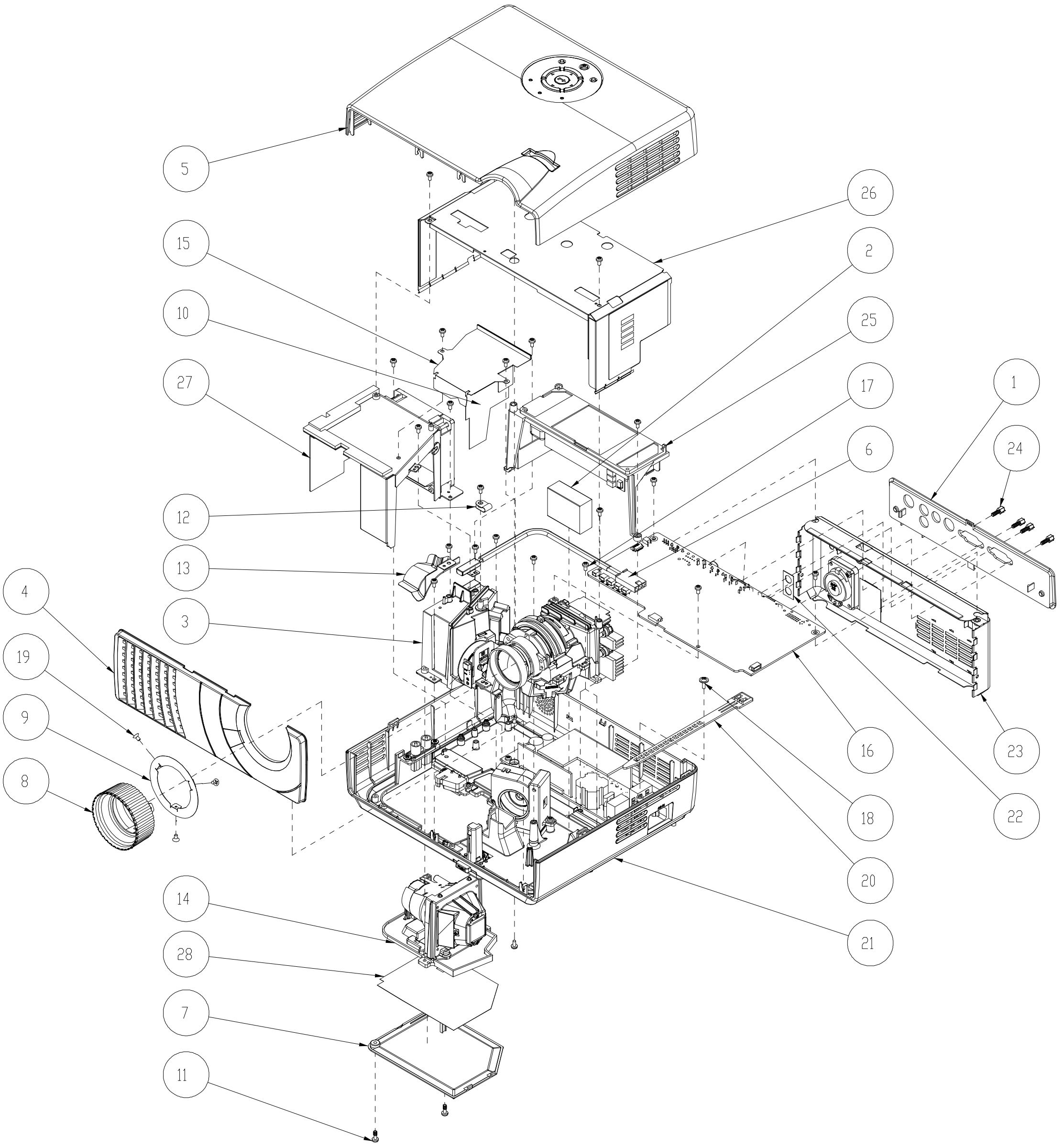


Exploded Parts List

Item	PART_NO	Description
1	70.83V02G001	ASSY LAMP HOLDER MODULE TDP-S8
2	70.83U03G001	ASSY LAMP CHANGE PLATE MODULE TDP-T9
3	85.1A526G060	SCREW PAN MECH M2.6*6 Ni NYLOK

Exploded Overview (T8)

I. T8 Unit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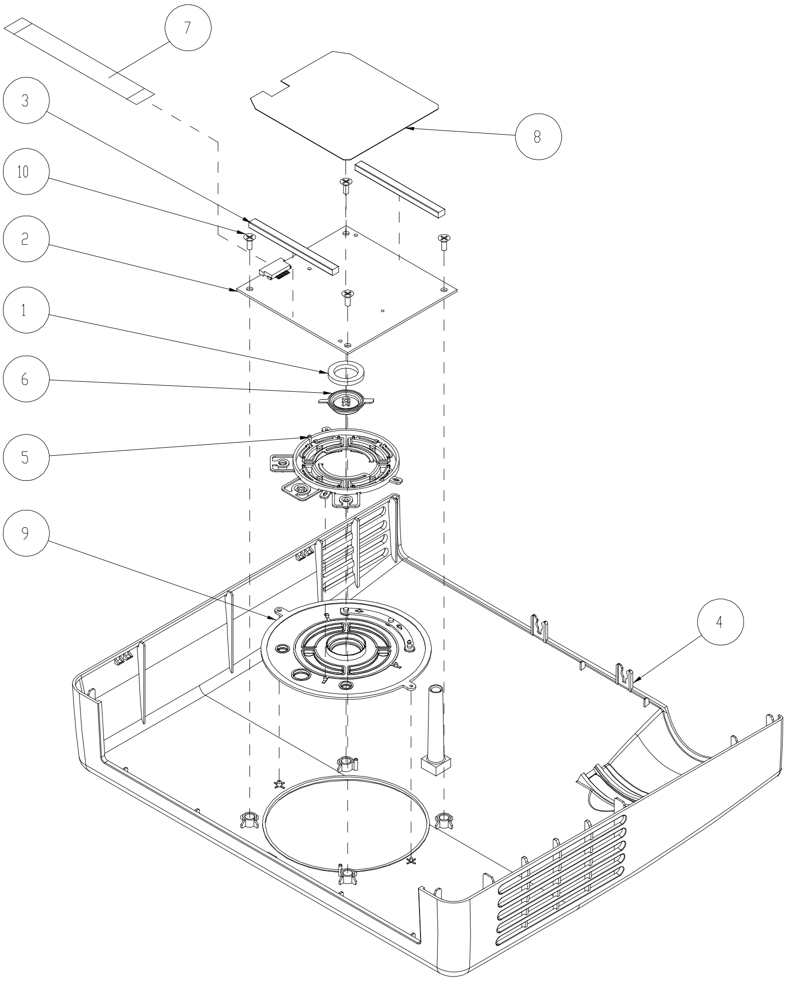
Exploded Parts List

Item	PART_NO	Description
1	51.83U04G001	BACK COVER PC+ABS-CA07A TDP-T9
2	41.82G14G001	EMI GASKET W15*L40*H30mm EP719
3	70.83U13G001	ASSY ENGINE MODULE TDP-T9
4	70.83U05G031	ASSY FRONT COVER MODULE TDP-T8
5	70.83U07G031	ASSY TOP COVER MODULE TDP-T8
6	43.83U01G002	KLIXON YS11 THERMAL SWITCH AND ADD CORE
7	51.83U05G001	LAMP COVER PC+ABS-CA07 TDP-T9
8	51.83U17G001	FOCUS RING PC+ABS-CA08 TDP-T9
9	51.83U18G001	FOCUS RING LIGHTCUT MYLAR TDP-T9
10	51.83U21G001	FRONT PLATE MYLAR FORMEX-GK-10 TDP-T9
11	61.00061G001	LOCK SCREW PAN MECH M3*8.5-3.5 Ni
12	61.00079G001	GROUNDING CABLE CLAMP FN-008 "PINGOOD
13	61.82G12G001	LAMP LIGHTCUT TOP FOR E19 AL 0.6t EP7190
14	70.83U01G001	ASSY LAMP MODULE TDP-T9
15	75.83U06G001	BUY ASSY EMI FRONT PLATE TDP-T9
16	80.83U02G001	PCBA MAIN BOARD TDP-T8 XGA FOR NON-CHINA REGION
17	85.1A123G050	SCREW PAN MECH M3*5 Ni
18	85.TA123G060	SCREW CAP TAP M3*6 Ni
19	85.YA321G052	SCREW FLAT HEAD TAP M1.7*5 D2.5 BLACK
20	51.00097G001	STRAP TIE PST-2 PE
21	70.83U09G001	ASSY BOTTOM HOUSING MODULE TDP-T9
22	41.83L01G001	EMI Gasket 12.7mm*25mm 0.5t TDP-T90A
23	70.83U08G001	ASSY EMI SHIELDING BACK COVER MODULE TDP-T9
24	85.005AGG408	SCREW HEX I/O #4-40 H4*L8 NI NYLOK
25	70.83U04G001	ASSY LAMP DRIVER MDULE TDP-T9
26	75.83A02G001	BUY ASSY EMI SHIELDING TOP COVER DP718
27	70.83U18G001	ASSY AXIAL FAN MODULE TDP-T9
28	61.82G28G002	LAMP COVER AL FOIL 0.1t EP719

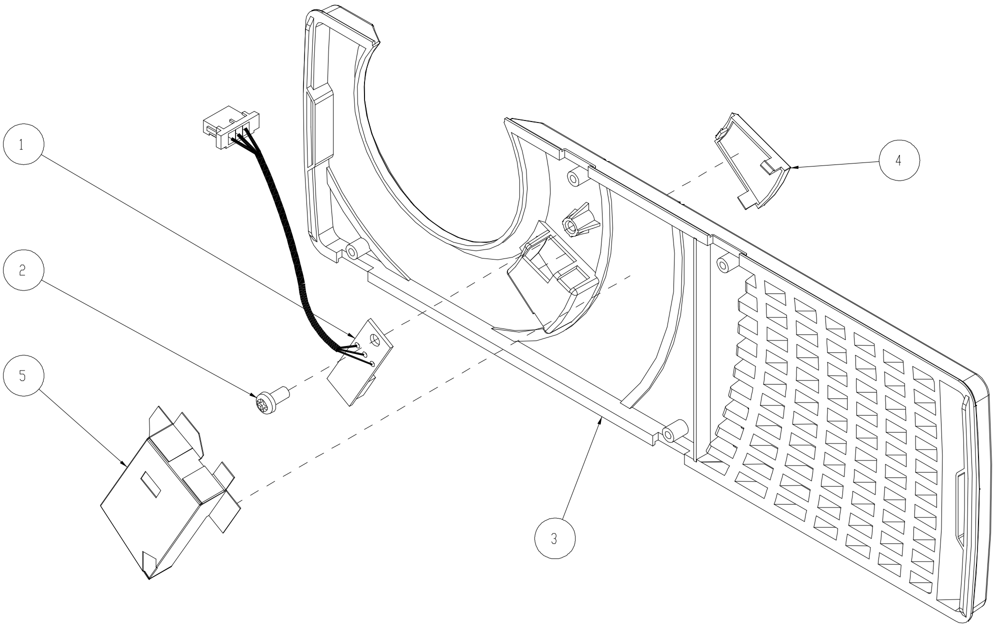
II. TOP COVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	52.80S02G001	ENTER KEY SPRING PE FORM 2.0t TDP-T90
2	80.83U03G001	PCBA KEYPAD BOARD TDP-T9
3	41.80V22G001	EMI GASKET 4*3&51mm S15E
4	51.83U01G032	TOP COVER PC+ABS-CA07A TDP-T8
5	51.83U07G001	KEY PAD BUTTON PC+ABS-CA08 TDP-T9
6	51.83U19G001	ENTER KEY PAD PC+ABS-CA08 TDP-T9
7	42.82G02G003	FFC Cable 14P 100mm EP719
8	51.83U13G001	KEY PAD BOARD INSULATOR MYLAR 0.125t TPD-T9
9	75.83U05G001	BUY ASSY KEY PAD CAP TDP-T9
10	85.0A126G040	SCREW DOUBLE FLAT MECH M2.6*4Ni

III. FRONT COVER MODULE

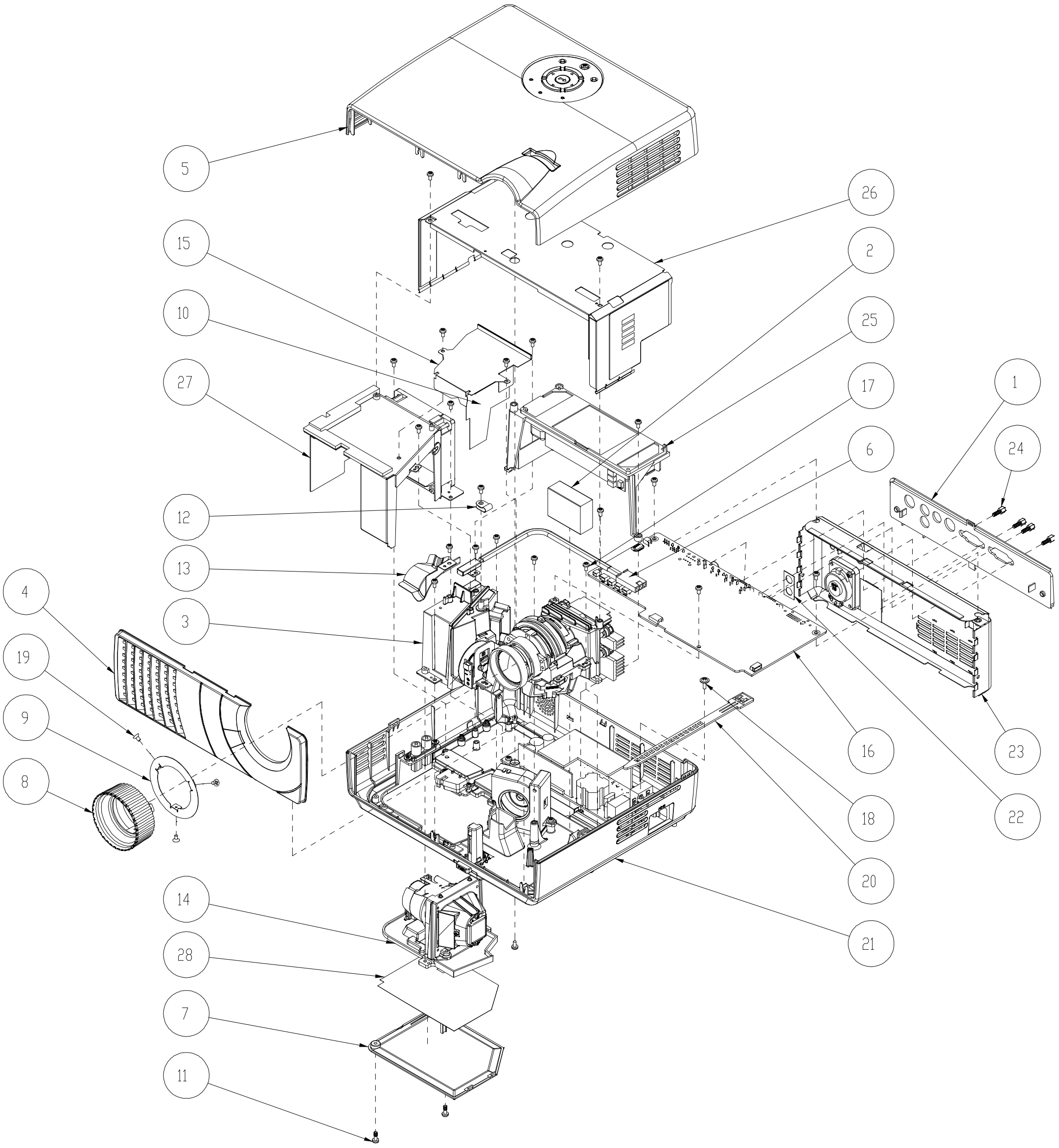


Exploded Parts List

Item	PART_NO	Description
1	80.83U05G001	PCBA IR SENSOR BOARD TDP-T9
2	85.UA123G050	SCREW PAN TAP M3*5 Ni
3	51.83U03G032	FRONT COVER PC+ABS CS-CA08 TDP-T8
4	51.83U09G001	IR LENS FRONT PC TDP-T9
5	51.83U16G001	IR LENS HOOD MYLAR FORMEX-GK-10 TDP-T9

Exploded Overview (T9)

I. T9 Unit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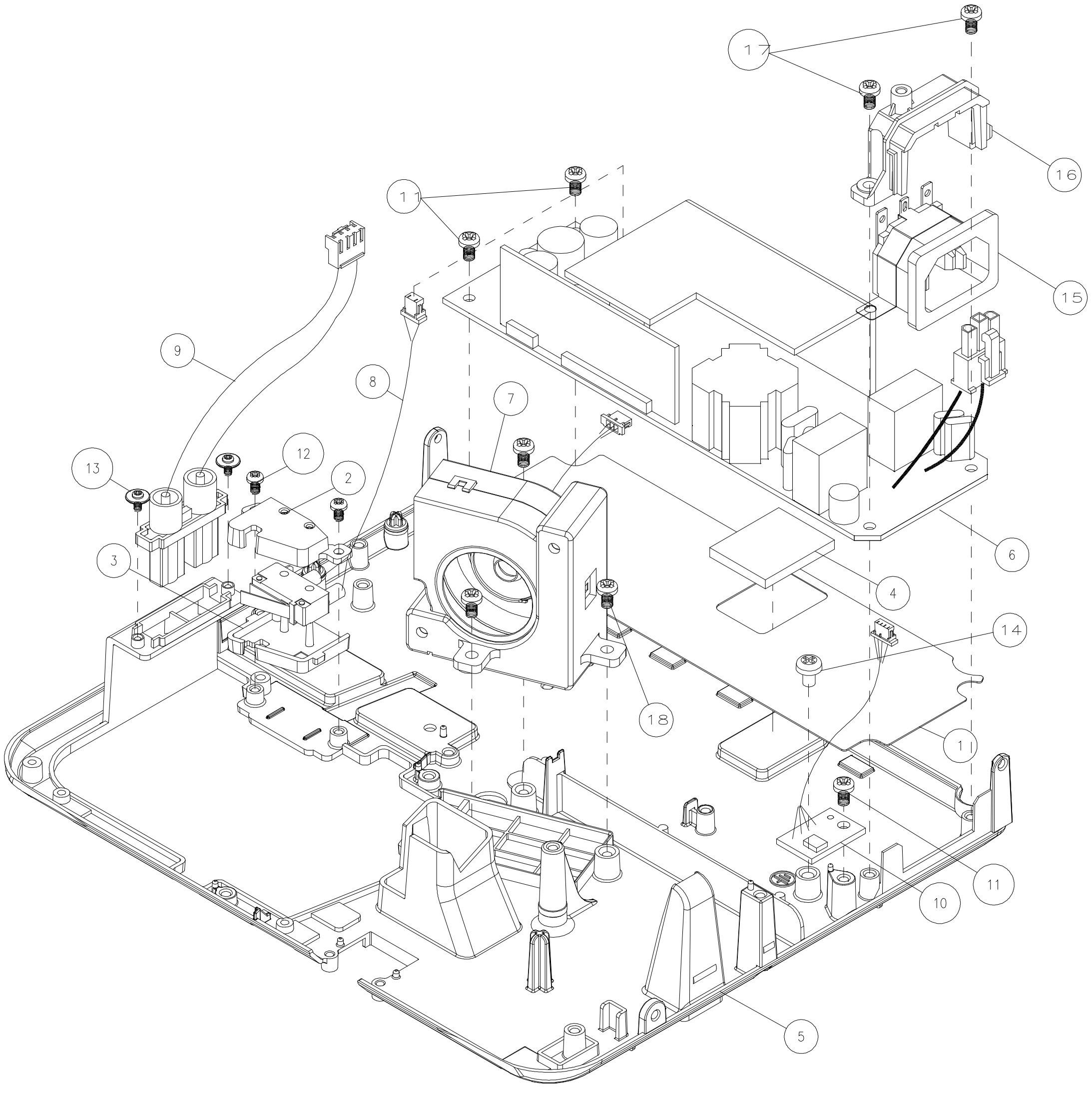
Exploded Parts List

Item	PART_NO	Description
1	51.83U04G001	BACK COVER PC+ABS-CA07A TDP-T9
2	41.82G14G001	EMI GASKET W15*L40*H30mm EP719
3	70.83U13G001	ASSY ENGINE MODULE TDP-T9
4	70.83U05G001	ASSY FRONT COVER MODULE TDP-T9
5	70.83U07G001	ASSY TOP COVER MODULE TDP-T9
6	43.83U01G002	KLIXON YS11 THERMAL SWITCH AND ADD CORE
7	51.83U05G001	LAMP COVER PC+ABS-CA07 TDP-T9
8	51.83U17G001	FOCUS RING PC+ABS-CA08 TDP-T9
9	51.83U18G001	FOCUS RING LIGHTCUT MYLAR TDP-T9
10	51.83U21G001	FRONT PLATE MYLAR FORMEX-GK-10 TDP-T9
11	61.00061G001	LOCK SCREW PAN MECH M3*8.5-3.5 Ni
12	61.00079G001	GROUNDING CABLE CLAMP FN-008 "PINGOOD
13	61.82G12G001	LAMP LIGHTCUT TOP FOR E19 AL 0.6t EP7190
14	70.83U01G001	ASSY LAMP MODULE TDP-T9
15	75.83U06G001	BUY ASSY EMI FRONT PLATE TDP-T9
16	80.83U01G001	PCBA MAIN BOARD T9 XGA
17	85.1A123G050	SCREW PAN MECH M3*5 Ni
18	85.TA123G060	SCREW CAP TAP M3*6 Ni
19	85.YA321G052	SCREW FLAT HEAD TAP M1.7*5 D2.5 BLACK
20	51.00097G001	STRAP TIE PST-2 PE
21	70.83U09G001	ASSY BOTTOM HOUSING MODULE TDP-T9
22	41.83L01G001	EMI Gasket 12.7mm*25mm 0.5t TDP-T90A
23	70.83U08G001	ASSY EMI SHIELDING BACK COVER MODULE TDP-T9
24	85.005AGG408	SCREW HEX I/O #4-40 H4*L8 NI NYLOK
25	70.83U04G001	ASSY LAMP DRIVER MDULE TDP-T9
26	75.83A02G001	BUY ASSY EMI SHIELDING TOP COVER DP718
27	70.83U18G001	ASSY AXIAL FAN MODULE TDP-T9
28	61.82G28G002	LAMP COVER AL FOIL 0.1t EP719

II. BASE PLATE MODULE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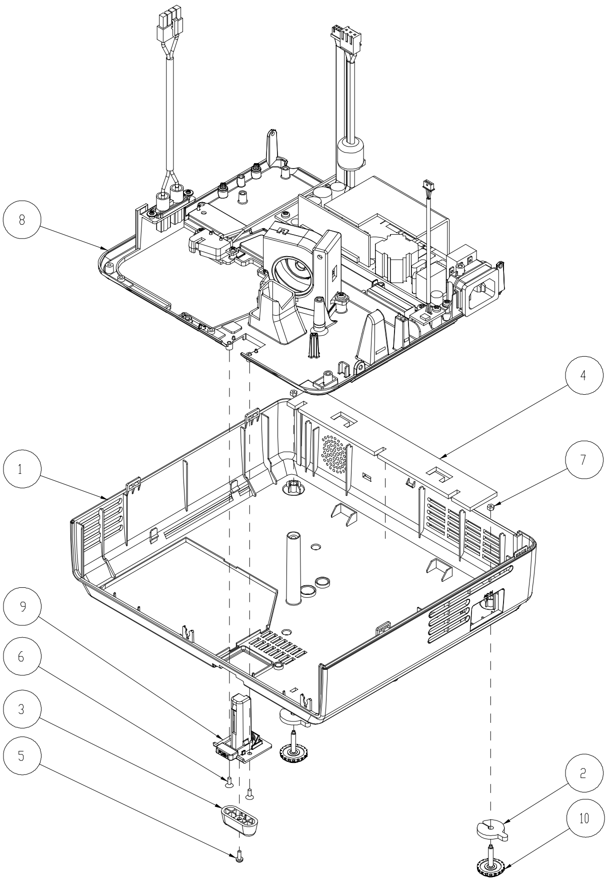
Exploded Parts List

Item	PART_NO	Description
1	51.82G24G001	BASE PLATE INSULATION MYLAR FOR LVPS EP7190
2	51.85816G001	LIMIT SWITCH HOLDER PPS XB31
3	51.85824G001	LIMIT SWITCH BOTTOM HOLDER PPS XB31
4	52.88504G001	LVPS BOTTOM THERMAL PAD 26*21*3mm Fujipoly GR-b
5	61.82G01G002	BASE PLATE Mg ALLOY AZ91D EP719H/EP716P
6	70.83U11G001	ASSY LVPS MODULE TDP-T9
7	70.83U19G001	ASSY BLOWER FAN MODULE TDP-T9
8	75.88514G002	ASSY LIMIT SWITCH CHERRY DB3C A1LB-5A
9	76.83F01G001	ASSY LAMP DRIVER(OSRAM)) TO LAMP W.A. HD72
10	80.82V04G001	PCBA THERMAL SENSOR BOARD PD120
11	85.1A123G050	SCREW PAN MECH M3*5 Ni
12	85.1A126G040	SCREW PAN MECH M2.6*4 Ni
13	85.3A122G040	SCREW CAP MECH M2*4 Ni
14	85.1C224G050	SCREW PAN MECH M4*5 COLOR W/TOOTH WASHER
15	42.83U01G001	W.A. AC-IN TDP-T9
16	51.83U15G001	INLET HOLDER PC+ABS-CA10 TDP-T9
17	85.1A123G080	PAN SCREW M3*8 FOR YM-64 FRONT CELL & SP
18	61.87340G001	STAND OFF M3*4L D8.0 2100MP

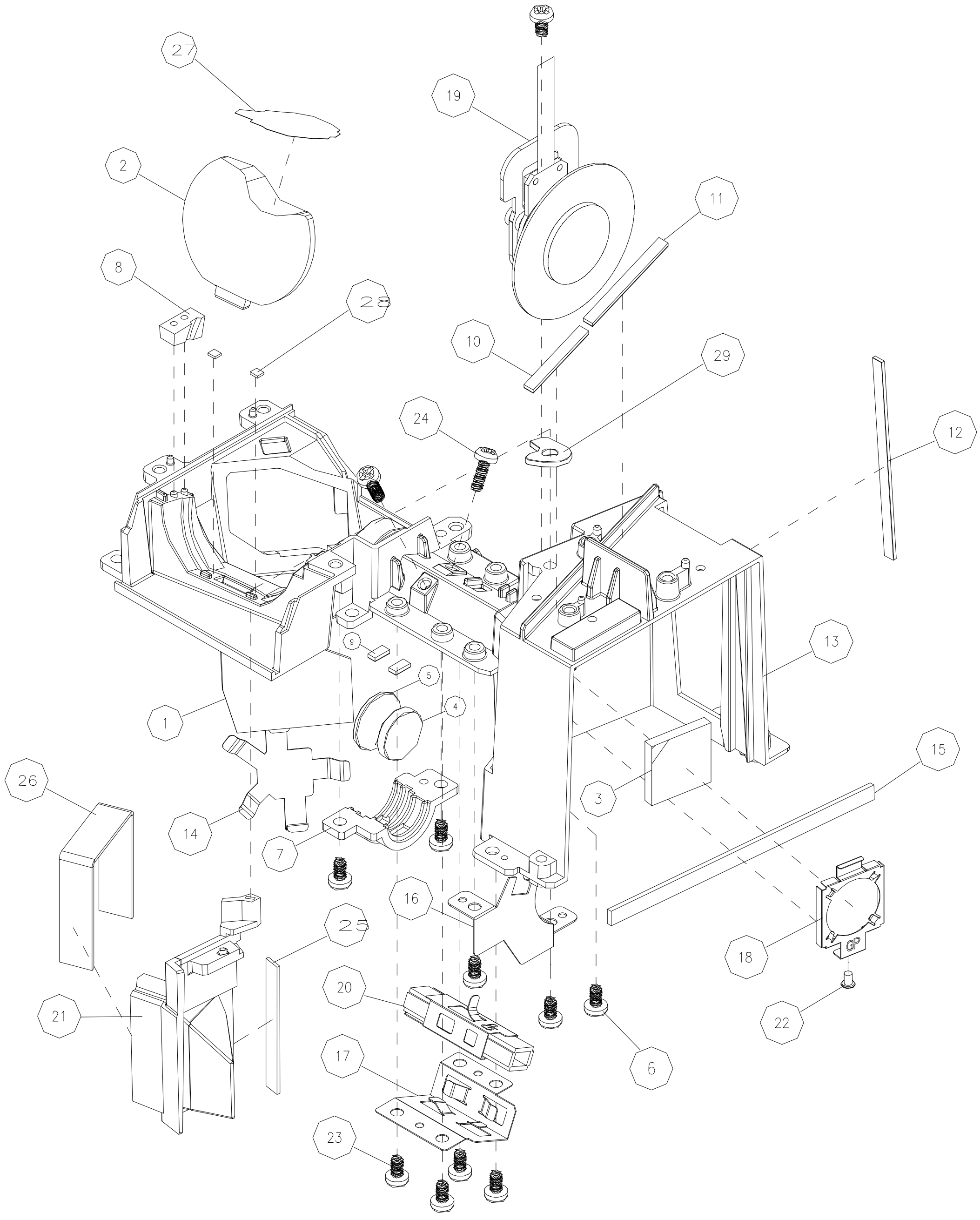
III. BOTTOM HOUSING MODULE



Exploded Parts List

Item	PART_NO	Description
1	51.83U02G001	BOTTOM COVER PC+ABS-CA07A TDP-T9
2	52.80S04G001	ADJUST FOOT SPACER 3.0t RUBBER BLUE TDP-T90
3	51.82G16G001	ELEVATOR FOOT PC+ABS C6200 EP7190 "GREEN'
4	41.83U03G001	EMI BOTTOM GASKET FOR TDP-T9
5	85.1A326G060	SCREW PAN HEAD MECH M2.6*6 BLACK
6	85.4A126G060	SCREW FLAT THED MECHINE M2.6*6
7	86.00122G015	NUT HEX M2.0*0.4P L15 Ni
8	70.83U10G001	ASSY BASE PLATE MODULE TDP-T9
9	70.83U12G001	ASSY ELEVATOR MODULE TDP-T9
10	70.83U20G001	ASSY ADJUST FOOT MODULE TDP-T9

IV. ENGINE BOTTOM COVER MODULE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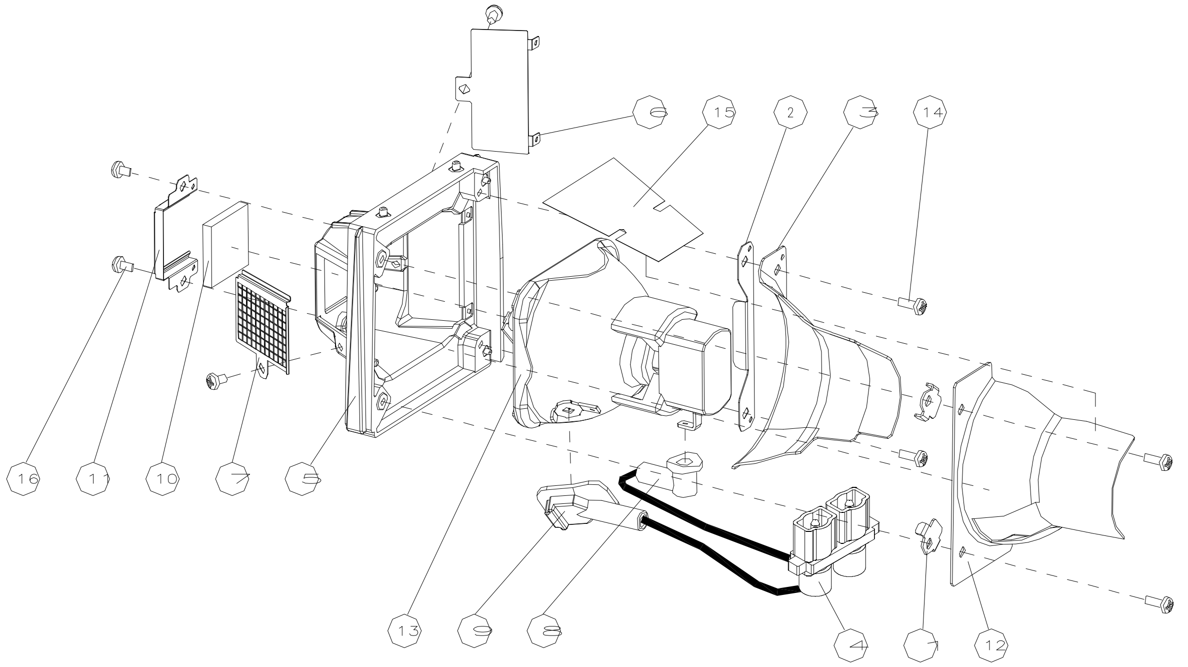
Exploded Parts List

Item	PART_NO	Description
1	23.82G02G001	MIRROR WITH ONE COATING
2	23.82G06G001	ASPHERICAL ZEONEX RELAY LENS EP719
3	23.82G10G002	SQUARE UV-IR 17*17mm^2 T=2.75m
4	23.82G20G001	BK7 CONDENSER LENS 13mm
5	23.82G20G011	BK7 CONDENSER LENS 15mm
6	85.1A123G060	SCREW PAN MECH M3*6 NI
7	51.82G13G001	CONDENSER HOLDER PC EP7190 "GREEN"
8	52.82G04G002	RELAY SIDE SEALED RUBBER-2 EP719
9	52.82G09G001	CONDENSER CUSHION RUBBER EP7190 "GREEN"
10	52.82G12G001	FAN HOLDER SEALED-1 HT800 EP7190 "GREEN"
11	52.82G13G001	FAN HOLDER SEALED-2 HT800 EP7190 "GREEN"
12	52.82G14G001	FAN HOLDER SEALED-3 HT800 EP7190 "GREEN"
13	61.82G03G001	ENGINE BOTTOM COVER Mg Alloy-AZ91D EP7190
14	61.82G11G001	MIRROR HOLDER PLATE SUS301 0.25t EP7190 "GREEN"
15	52.82V12G001	ENGINE BOTTOM SPONGE PD120
16	61.82G19G001	ROD HIDE RAY PLATE AL 0.4t EP7190 "GREEN"
17	61.82G21G001	ROD FIX PLATE SUS301 0.25t EP7190 "GREEN"
18	61.82G22G001	UV-IR GLASS HOLDER SUS301 0.2t EP7190 "GREEN"
19	70.83U16G001	ASSY COLOR WHEEL MODULE TDP-T9
20	70.83U17G001	ASSY ROD MODULE TDP-T9
21	61.83U02G001	BLOWER FAN DUCT AL TDP-T9
22	85.0A122.030	SCREW DOBULE FLAT MECH M2*3 Ni
23	85.1A123.050	SCREW PAN MECH M3*5 NI
24	85.1A523.080	SCREW PAN MECH M3*8 Ni NYLOK
25	52.82G20G001	50*25 BLOWER FAN DUCT SEAL RUBBER FOR ENGINE
26	52.82G20G001	50*25 BLOWER FAN DUCT SEAL RUBBER F12 0.8t EP7190
27	51.82G25G001	RELAY LENS MYLAR EP719
28	51.83U25G001	RELAY LENS MYLAR FORMEX PP 0.3t TDP-T9
29	61.83U07G001	BLOWER FAN DUCT WASHER AL1.2t

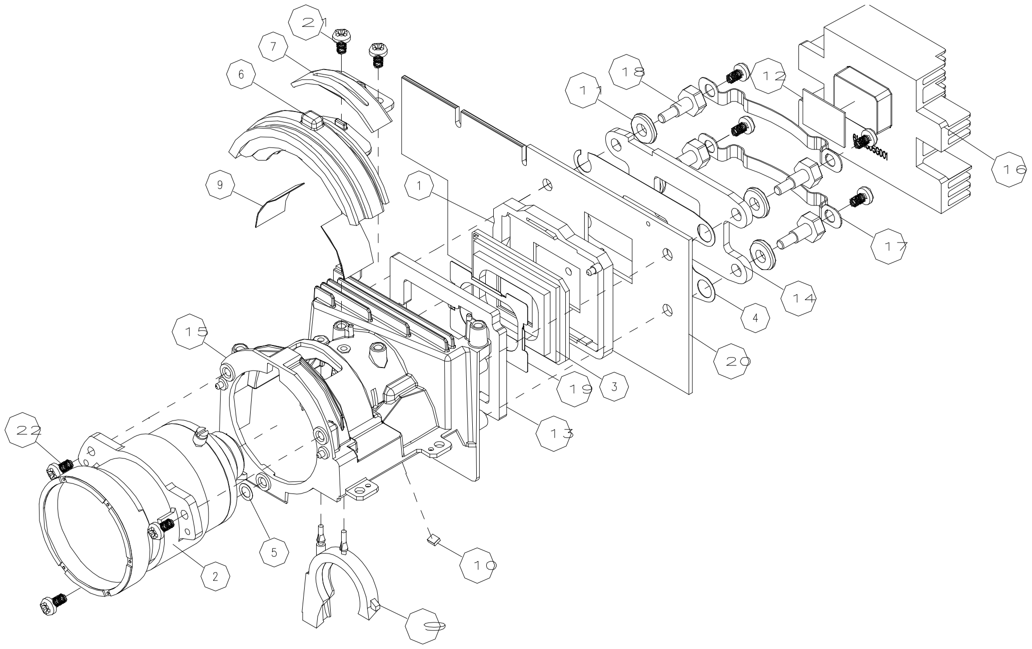
V. LAMP HOLDER MODULE



Exploded Parts List

Item	PART_NO	Description
1	61.88506G001	LAMP BRACKET 2 SUS301 0.3t 220
2	61.80S10G001	LAMP BRKT-1 SUS301 TDP-T90
3	61.83U03G001	LAMP LIGHTCUT SIDE FOR E17.5 T
4	76.81A01G003	BUY ASSY WIRE 2P#22 200C 6KV B
5	61.83U01G001	LAMP HOLDER FOR E17.5 LAMP AL
6	61.82G26G001	LAMP E19 MESH REAR SUS301 0.2t
7	61.83U04G001	LAMP E17.5 MESH FRONT SUS301 0
8	52.80J26G001	LAMP RUBBER VULCAN-1
9	52.85902G011	LAMP CONTACT COVER RUBBER 300
10	23.83U10G001	LAMP COVER GLESS 18*18*2.75 mm
11	61.83U06G001	COVER GLASS PLATE SUS301 0.2t
12	61.83U05G001	LAMP REFRACTOR MESH 0.6t TDP-T
13	23.83U15G001	OSRAM 200W E17.5 N-TYPE,GRADE
14	85.1A526G060	SCREW PAN MECH M2.6*6 Ni NYLOK
15	51.83U22G001	LAMP KAPTON MYLAR 0.1t TDP-T9
16	85.1A126G030	SCREW PAN MECH M2.6*3 Ni

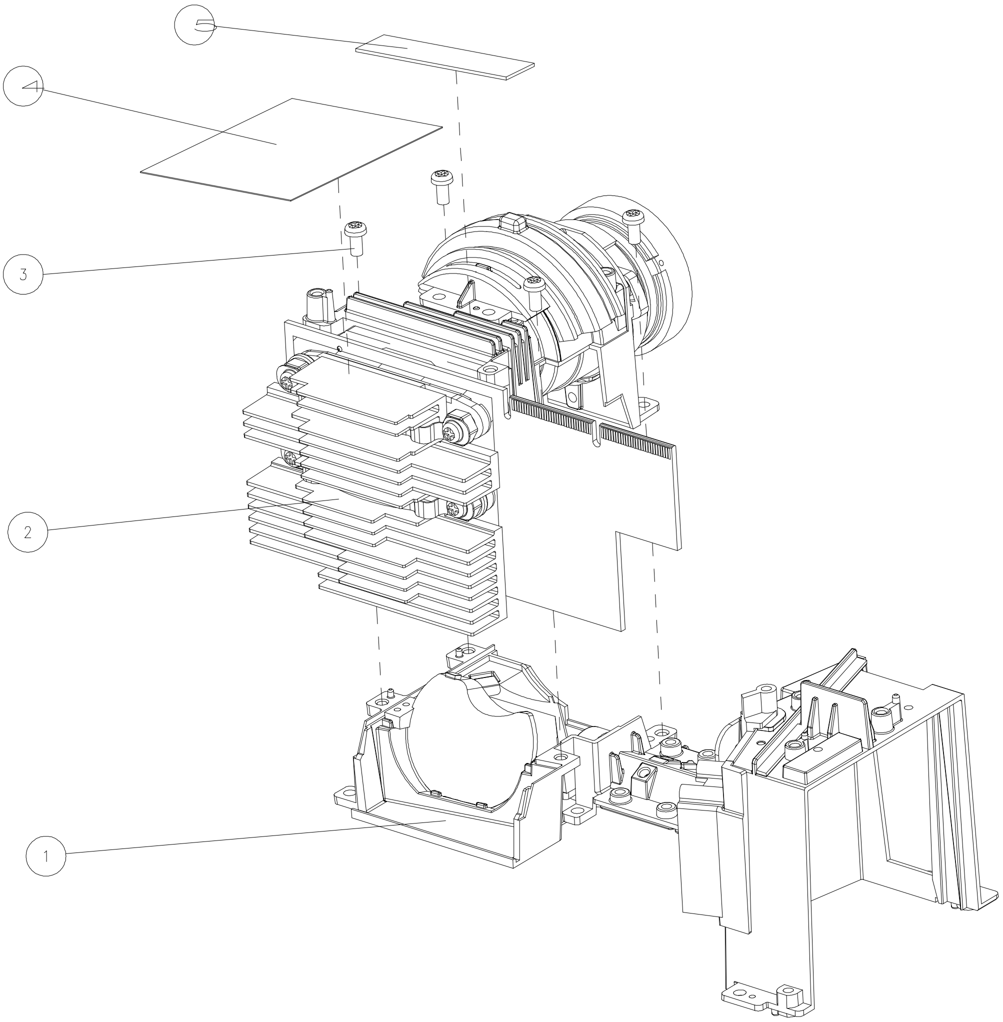
VI. ENGINE TOP COVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	11.009F0G005	CNNT F 166P FOR 0.55" SVGA LGA DMD SOCKET;FOXCONN
2	23.83U01G001	NITTOH WT70 PROJECTION LENS
3	48.82GDMGD01	DMD 1024X768 PIXEL DDR 0.7" XGA
4	51.80B31G002	DMD INSULATOR MYLAR 0.435t T90
5	61.83U10G001	WASHER AL FOIL + ELECTRIC CONDUCT TAPE 0.2t TDP-T9
6	51.82G07G001	ZOOM RING PC+ABS C6200 EP7190 "GREEN"
7	51.82G08G001	ZOOM RING ORBIT PC+ABS C6200 EP7190 "GREEN"
8	51.82G22G001	ZOOM ANTI-ABRASION TEFLON EP7190 "GREEN"
9	52.82G03G002	RELAY SEALED RUBBER-2 EP719
10	52.82G10G001	RELAY CUSHION RUBBER EP7190 "GREEN"
11	52.87130G001	RUBBER BLOWER 595925 "GREEN"
12	52.87319G001	DMD THERMAL PAD 18*13*0.5t "GREEN"
13	52.89627G002	DMD SEAL RUBBER BF1000 3.2t EP719
14	61.80J48G002	DMD HEATSINK BACKER PLATE A6061 739
15	61.82G02G001	ENGINE TOP COVER Mg Alloy-AZ91D EP7190
16	61.83A03G001	DMD HEATSINK AL 1070 DP718
17	61.88608G001	DMD HEATSINK SPRING PLATE SUS301 0.4t Ivy10X
18	61.88611G001	DMD SCREW Ivy10X "GREEN"
19	61.89643G001	DMD MASK PLATE SUS301 0.15t EP759
20	80.82G02G001	PCBA DMD BOARD EP7190
21	85.1A123.050	SCREW PAN MECH M3*5 NI
22	85.1A123.060	SCREW PAN MECH M3*6 Ni

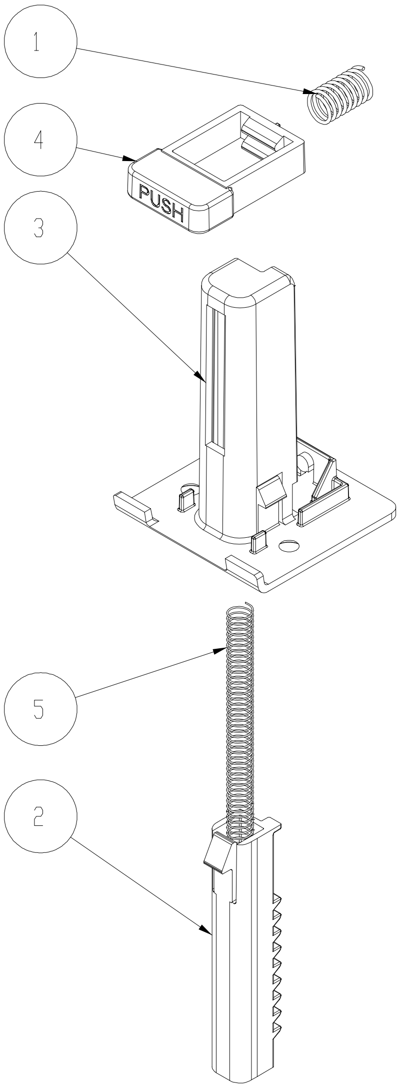
VII. ENGINE MODULE



Exploded Parts List

Item	PART_NO	Description
1	70.83U14G001	ASSY ENGINE BOTTOM COVER MODUL TDP-T9
2	70.83U15G001	ASSY ENGINE TOP COVER MODULE TDP-T9
3	85.1A123.050	SCREW PAN MECH M3*5 NI
4	41.82K09G001	EMI TAPE 30*50mm
5	41.82K13G001	EMI GASKET W5*H1*L35mm

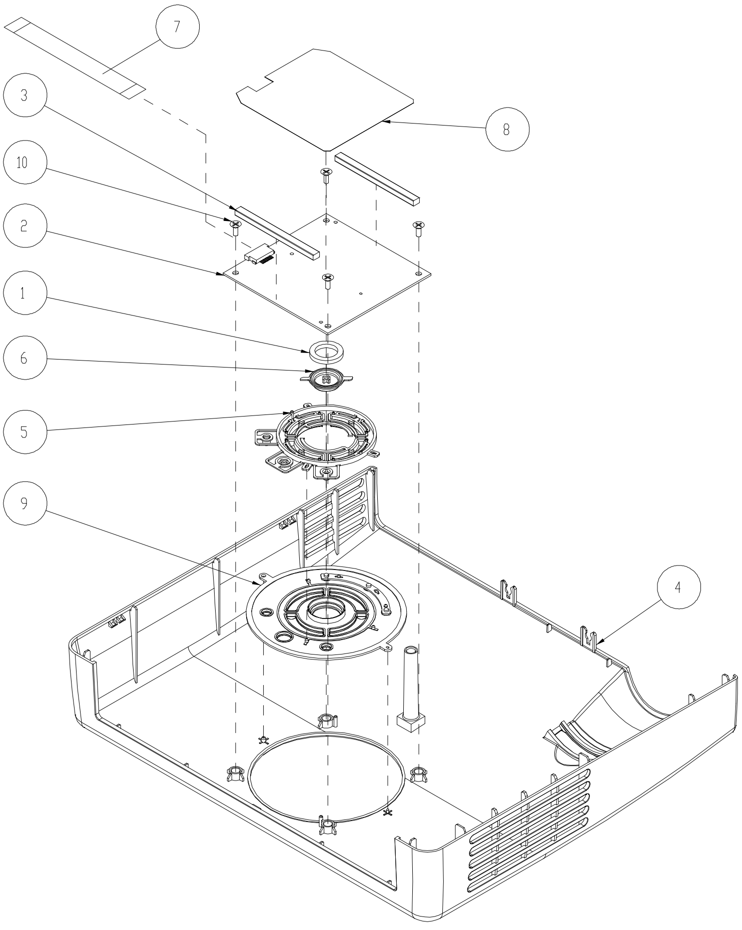
VIII. ELEVATOR MODULE



Exploded Parts List

Item	PART_NO	Description
1	61.85913G001	ELEVATOR SPRONG SUS304 EP910
2	61.86814G001	ELEVATOR EXTEND SPRING PD120
3	51.83U10G001	ELEVATOR BASE PC+ABS-CA07A TDP-T9
4	51.83U11G001	ELEVATOR PUSH BUTTON PC+ABS-CA07A TDP-T9
5	61.86814G001	ELEVATOR EXTEND SPRING PD120

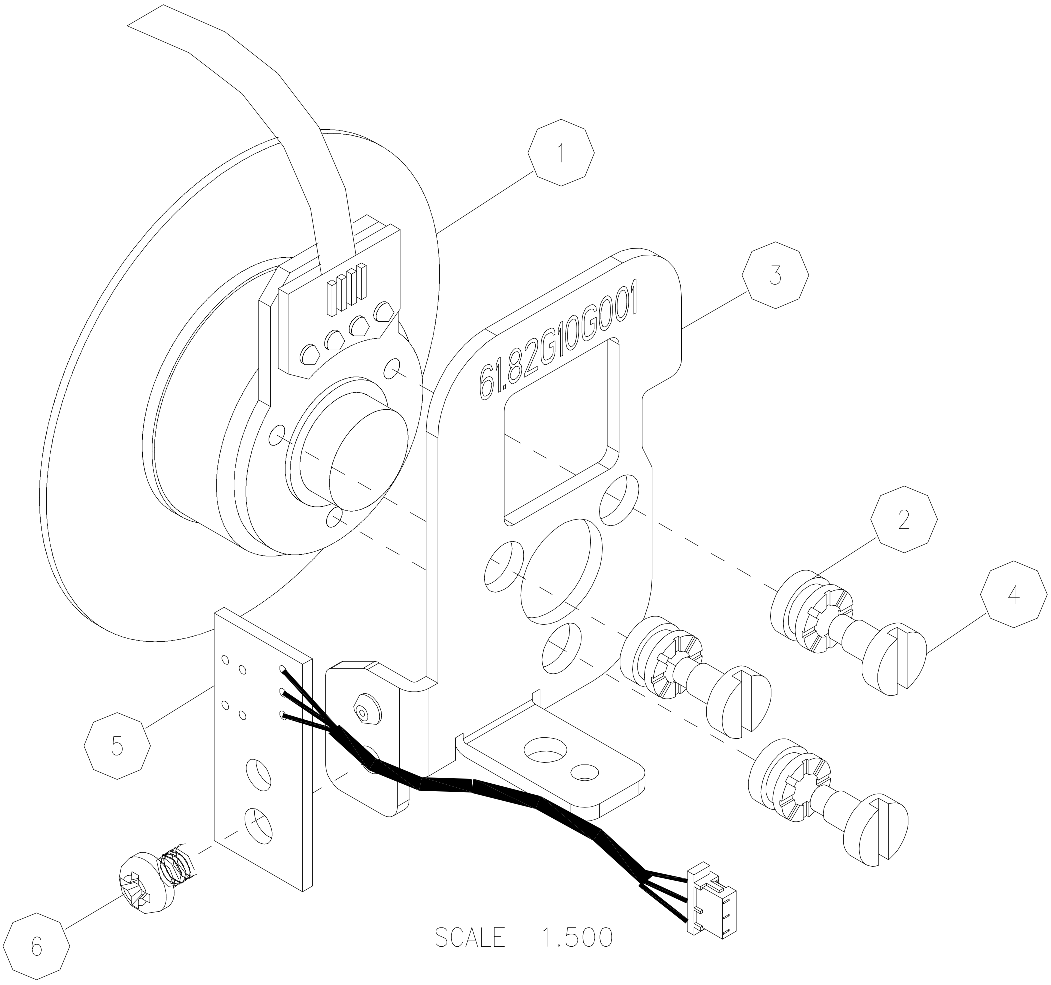
IX. TOP COVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	52.80S02G001	ENTER KEY SPRING PE FORM 2.0t TDP-T90
2	80.83U03G001	PCBA KEYPAD BOARD TDP-T9
3	41.80V22G001	EMI GASKET 4*3&51mm S15E
4	51.83U01G002	TOP COVER PC+ABS-CA07A TDP-T9
5	51.83U07G001	KEY PAD BUTTON PC+ABS-CA08 TDP-T9
6	51.83U19G001	ENTER KEY PAD PC+ABS-CA08 TDP-T9
7	42.82G02G003	FFC Cable 14P 100mm EP719
8	51.83U13G001	KEY PAD BOARD INSULATOR MYLAR 0.125t TPD-T9
9	75.83U05G001	BUY ASSY KEY PAD CAP TDP-T9
10	85.0A126G040	SCREW DOUBLE FLAT MECH M2.6*4Ni

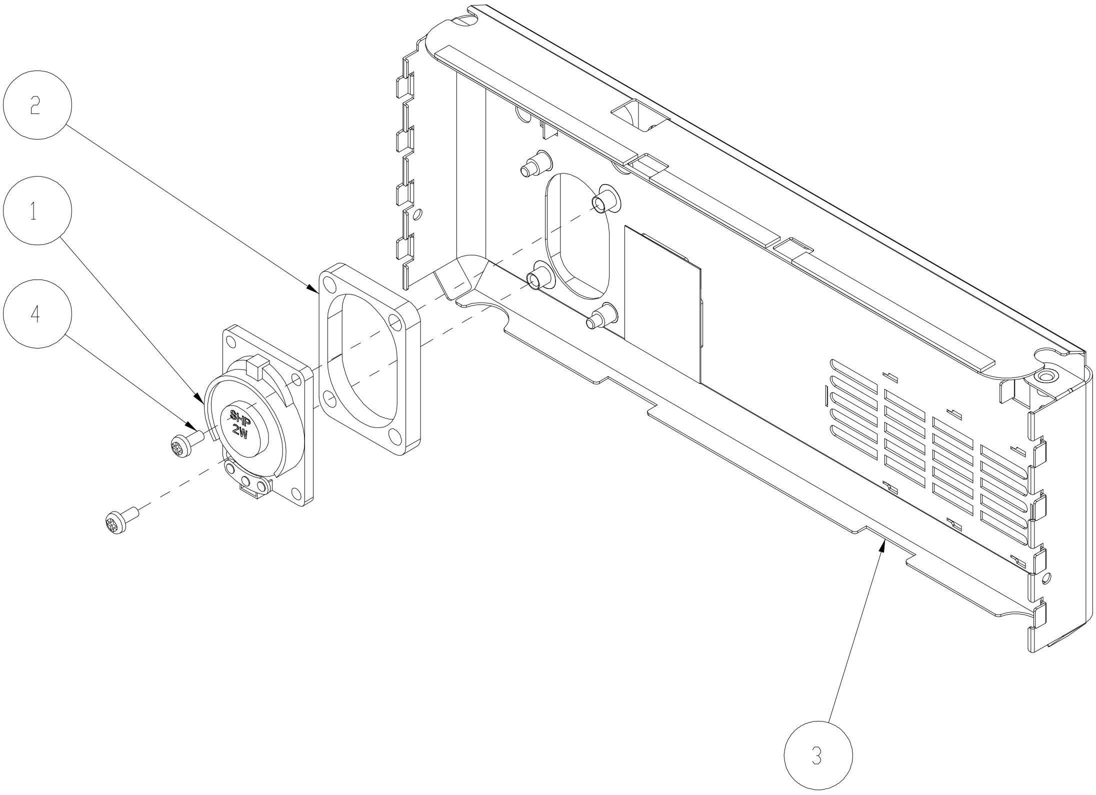
X. COLOR WHEEL MODULE



Exploded Parts List

Item	PART_NO	Description
1	23.82G19G001	R92G83B75W110 COLOR WHEEL "GREEN
2	52.83615.001	COLOR WHEEL DISC RUBBER , EzPro755
3	61.82G10G001	COLOR WHEEL HOLDER SECC 1.2t EP7190 "GREEN"
4	61.83628G002	COLOR WHEEL SHOULDER SCREW NICKEL M2*4.8 FILLIST
5	80.82G06G001	PCBA PHOTO SENSOR BOARD EP719
6	85.1A626G040	SCREW PAN MECH M2.6*4 BLACK NYLOK

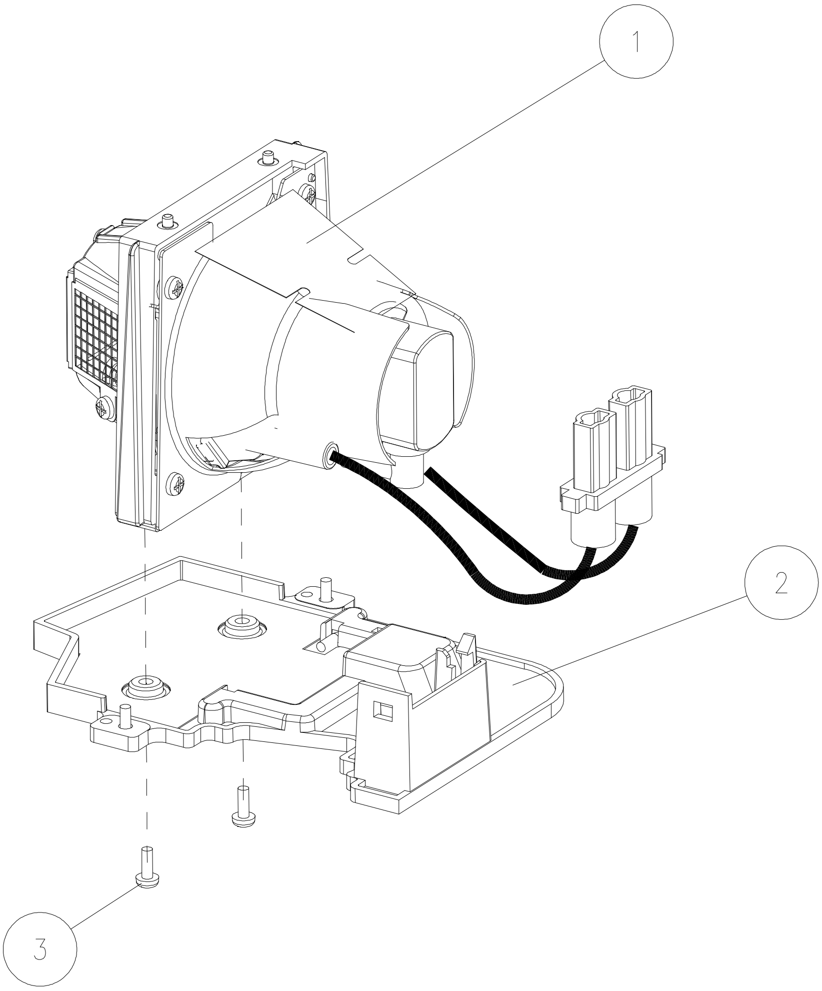
XI. EMI SHIELDING BACK COVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	49.80M01G001	SPEAKER 2W 4ohm 150mm TDP-T9
2	52.82G11G001	SPEAKER SPONGE EP7190
3	75.83U02G001	BUY ASSY EMI SHIELDING BACK COVER TDP-T9
4	85.1A123G060	SCREW PAN MECH M3*6 NI

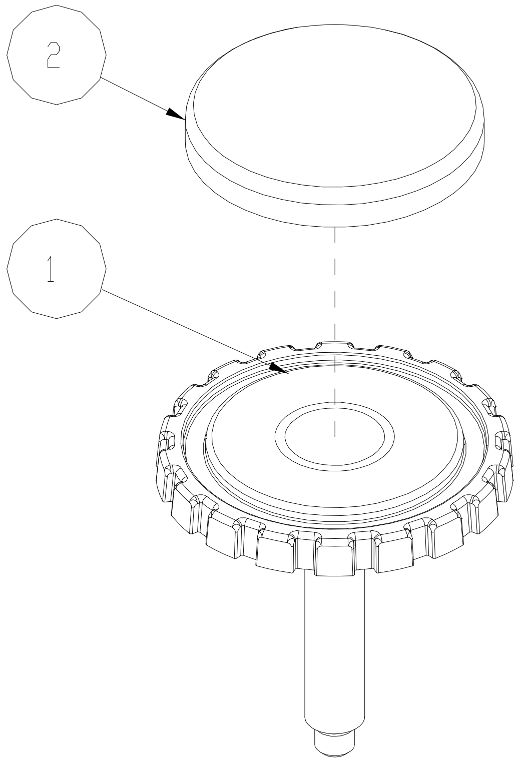
XII. LAMP MODULE



Exploded Parts List

Item	PART_NO	Description
1	70.83U02G001	ASSY LAMP HOLDER MODULE TDP-T9
2	70.83U03G001	ASSY LAMP CHANGE PLATE MODULE TDP-T9
3	85.1A526G060	SCREW PAN MECH M2.6*6 Ni NYLOK

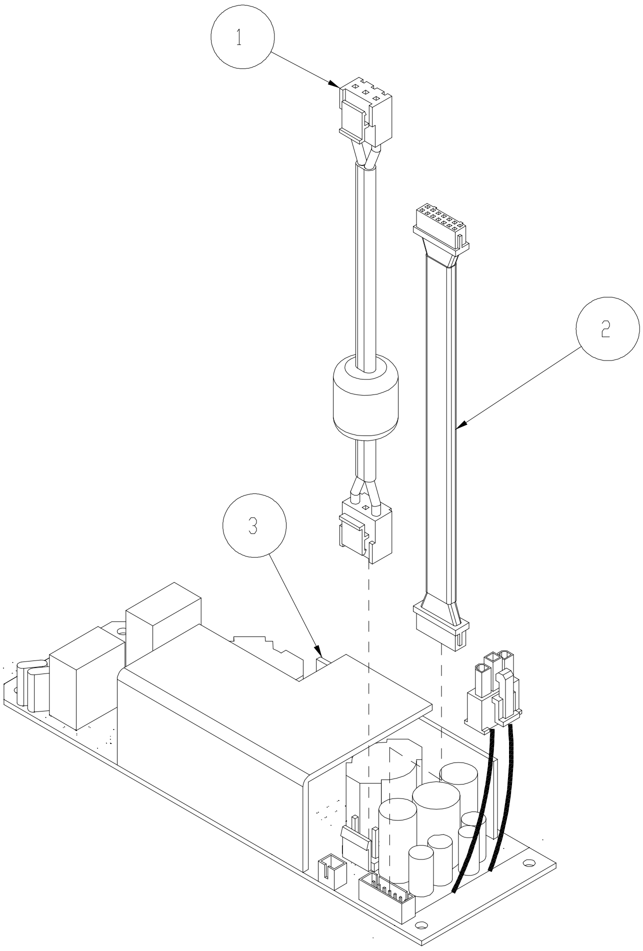
XIII. ADJUST FOOT MODULE



Exploded Parts List

Item	PART_NO	Description
1	51.80S21G011	ADJUST FOOT PC+ABS TDP-T9
2	52.86801G001	RUBBER FOOT REAR DP725

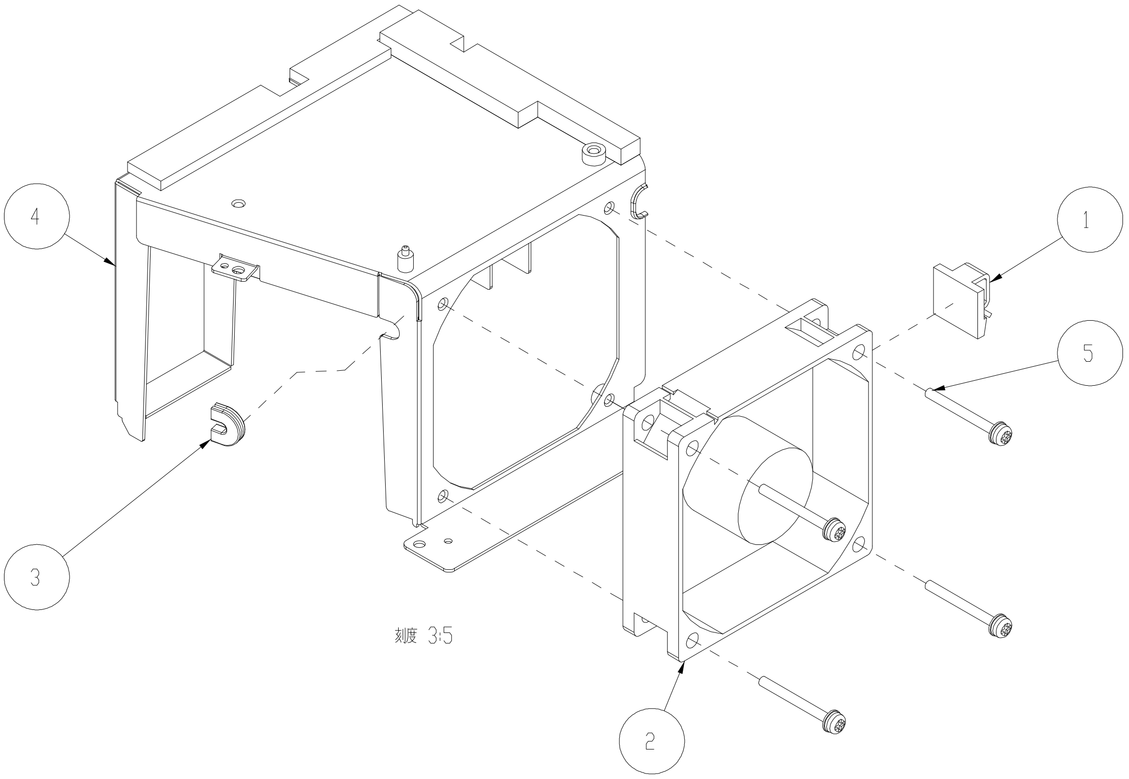
XIV. LVPS MODULE



Exploded Parts List

Item	PART_NO	Description
1	42.81G01G001	W.A. 2P #20 160mm LAPS/BALLAST PD120
2	42.88502G002	W.A. 14P 130mm LVPS TO M/B 2200MP
3	75.83V01G001	ASSY LVPS LITE ON 200W S8

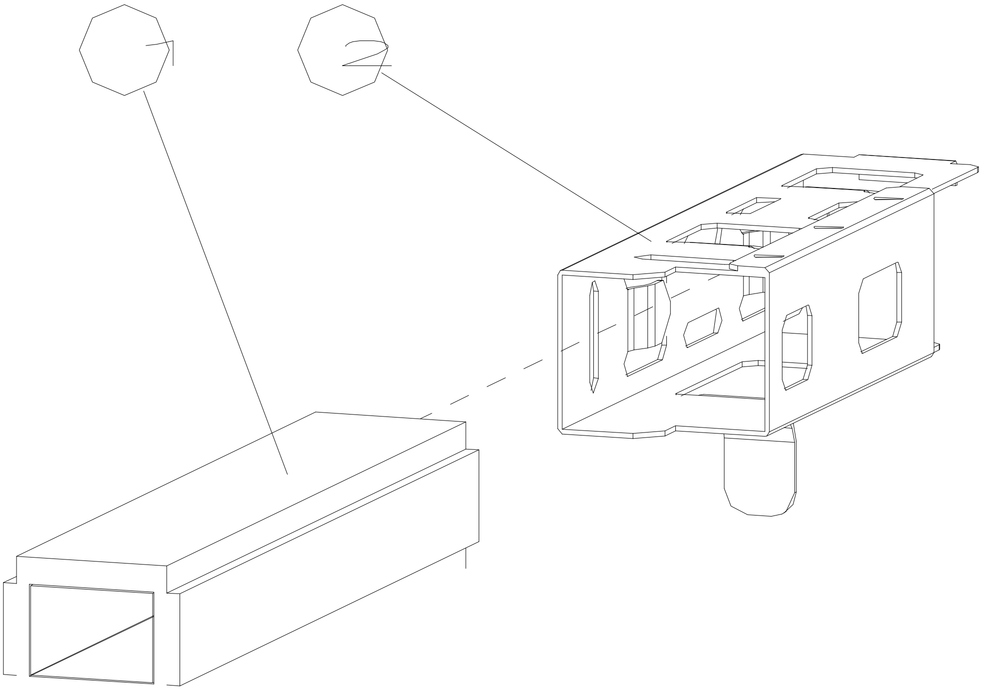
XV. AXIAL FAN MODULE



Exploded Parts List

Item	PART_NO	Description
1	51.82G29G001	WIRE MOUNTS FW-4D-MKW EP719
2	49.83J01G001	70x20 SYSTEM FAN, SUNON GM1207PKVX-A, R TYPE
3	52.83U03G001	CABLE PROTECTOR SILICONE RUBBER UL94V-0 TDP-T9
4	75.83U04G001	BUY ASSY 7020 FAN BRACKET TDP-T9
5	85.1F123G260	SCREW PAN MECH E/SF M3*26 Ni

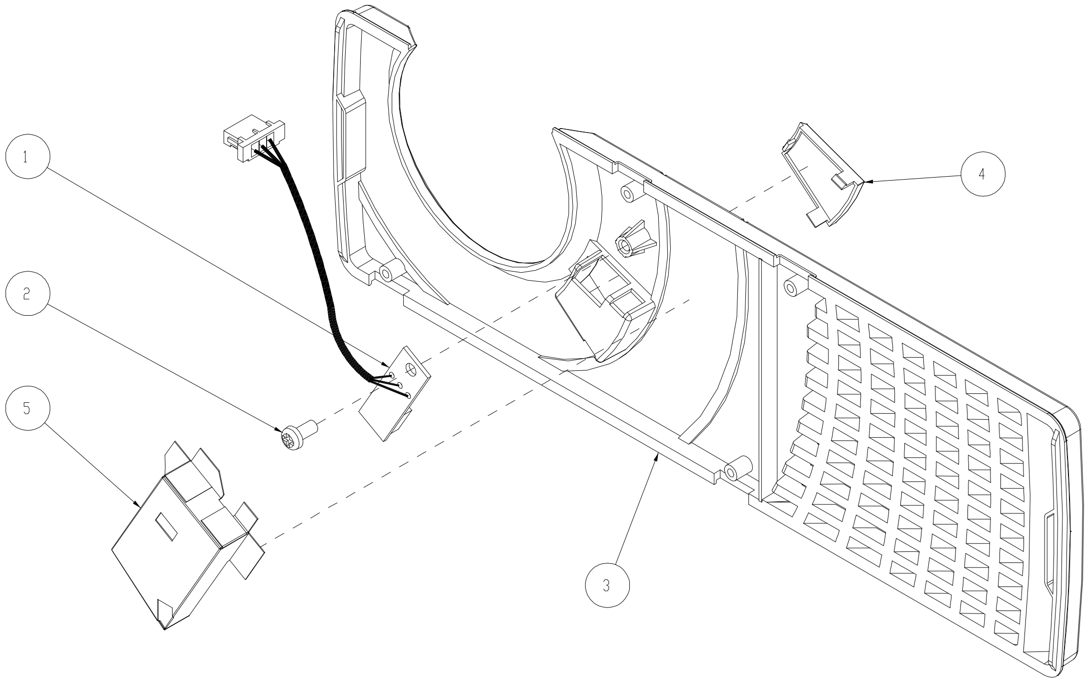
XVI. LAMP MODULE TOP



Exploded Parts List

Item	PART_NO	Description
1	23.82G17G012	ROD (5.36*3.65*34.9mm)
2	61.82G20G001	ROD HOLDER SUS301 0.2t EP7190

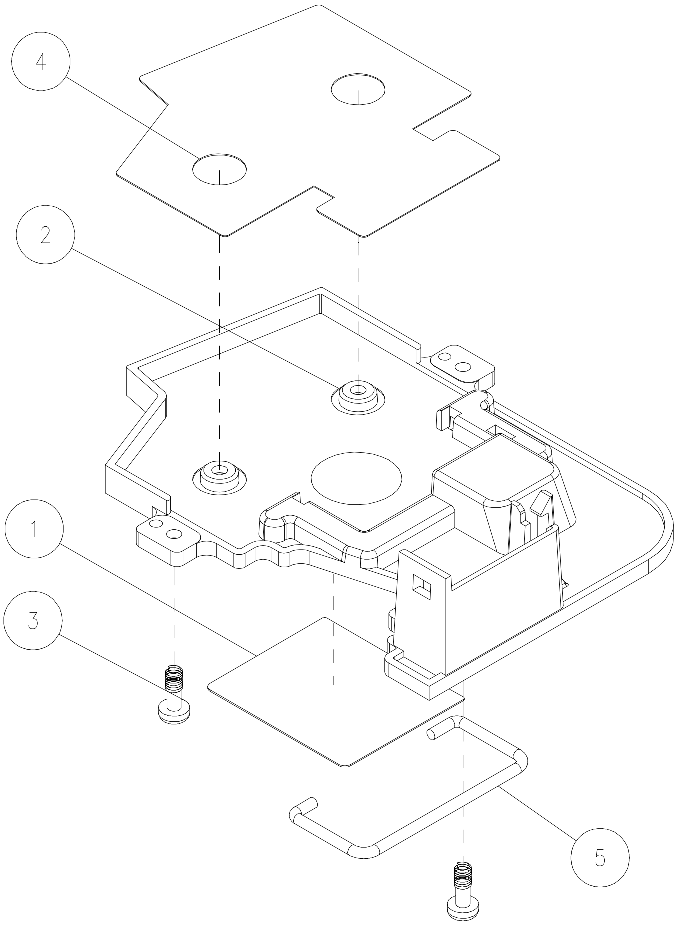
XVII. FRONT COVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	80.83U05G001	PCBA IR SENSOR BOARD TDP-T9
2	85.UA123G050	SCREW PAN TAP M3*5 Ni
3	51.83U03G002	FRONT COVER PC+ABS-CA10 TDP-T9
4	51.83U09G001	IR LENS FRONT PC TDP-T9
5	51.83U16G001	IR LENS HOOD MYLAR FORMEX-GK-10 TDP-T9

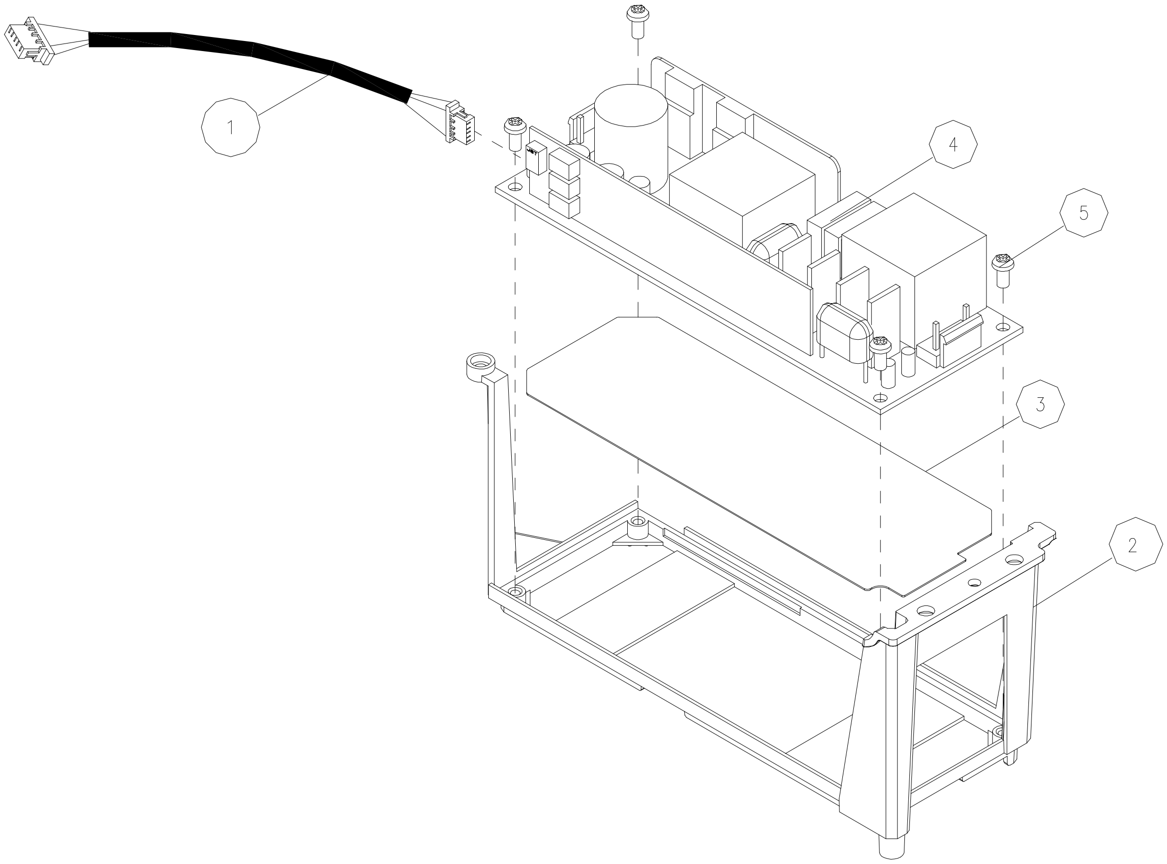
XVIII. LAMP CHANGE PLATE MODULE



Exploded Parts List

Item	PART_NO	Description
1	35.80S21G001	LABEL LAMP CHANGE CAUTION TDP-T9
2	51.82G14G001	LAMP CHANGE PLATE PPS EP7190
3	61.80511G001	SCREW PAN MECH M3*8-4 BLACK
4	61.82G29G002	LAMP CHANGE PLATE FOIL AL EP7190
5	61.87125G001	LAMP HADNLER SUS304 "GREEN"

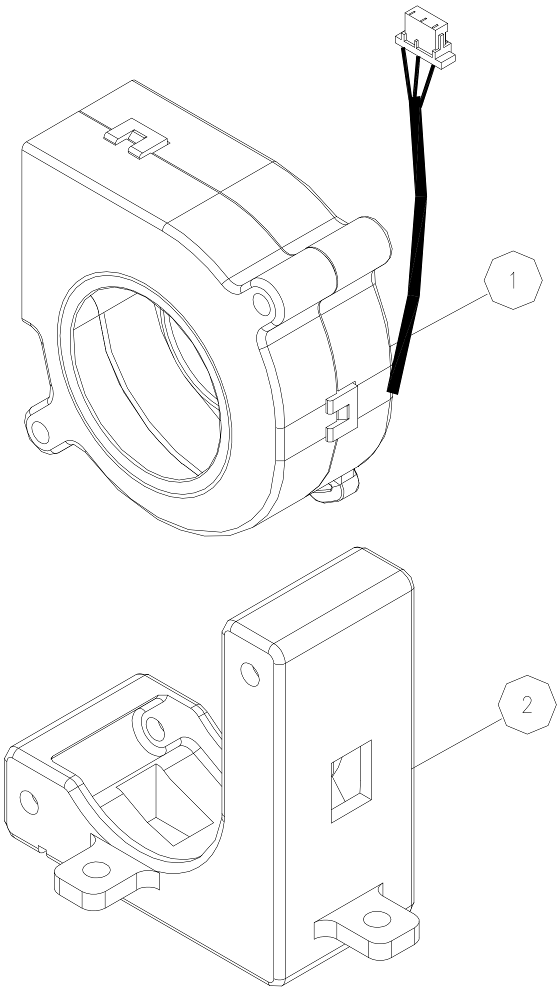
XIX. LAMP DRIVER MODULE



Exploded Parts List

Item	PART_NO	Description
1	42.80S03G001	W.A. 5P #28 210mm LVPS TO MB TDP-T90
2	51.82G17G001	LAMP DRIVER HOLDER PC+ABS C6200
3	51.82G23G001	LAMP DRIVER INSULA MYLAR EP7190
4	75.83J01G001	ASSY OSRAM LAMPDRIVER 230W
5	85.WA123.060	.SCREW PAN TAP M3*6 Ni

XX. BLOWER FAN MODULE



Exploded Parts List

Item	PART_NO	Description
1	49.82Y02G001	SUSON 4520 BLOWER R TYP
2	52.82G08G001	BLOWER 4520 RUBBER EP7190 "GREEN"

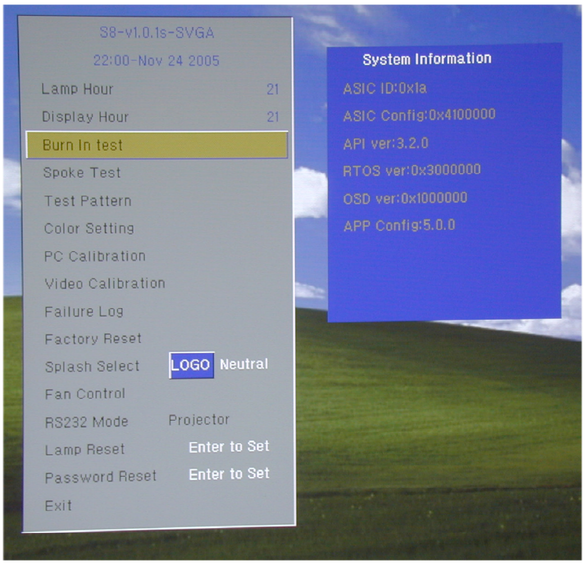
Appendix B

I. Factory Mode Introduction

Only functions concerning repair are introduced. Functions not introduced are reserved for engineering use.

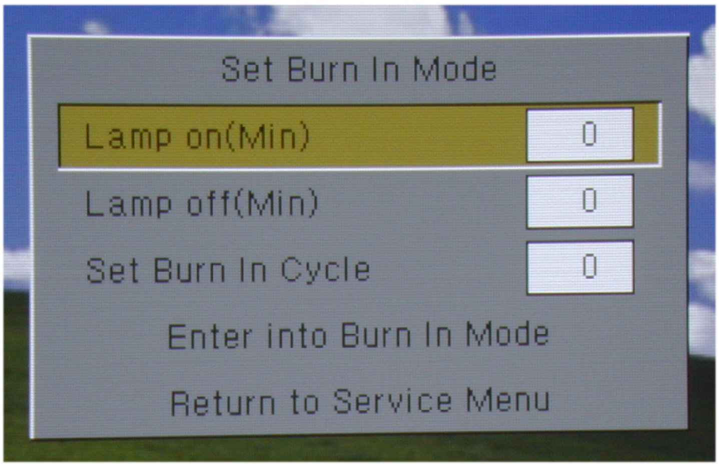
How to enter Factory Mode:

1. Must be with signal input.
2. Hot key: press “ON/STANDBY” “VOL-” “VOL-” “MENU” sequentially to enter Factory Mode. (See the below pic)


S8-v1.0.1s-SVGA
22:00-Nov 24 2005
Lamp Hour 21
Display Hour 21
Burn In test
Spoke Test
Test Pattern
Color Setting
PC Calibration
Video Calibration
Failure Log
Factory Reset
Splash Select LOGO Neutral
Fan Control
RS232 Mode Projector
Lamp Reset Enter to Set
Password Reset Enter to Set
Exit
System Information
ASIC ID:0x1a
ASIC Config:0x4100000
API ver:3.2.0
RTOS ver:0x3000000
OSD ver:0x1000000
APP Config:5.0.0

Burn In Mode

Select “Burn In Mode” and then press “Enter” key to enter Burn In Mode.

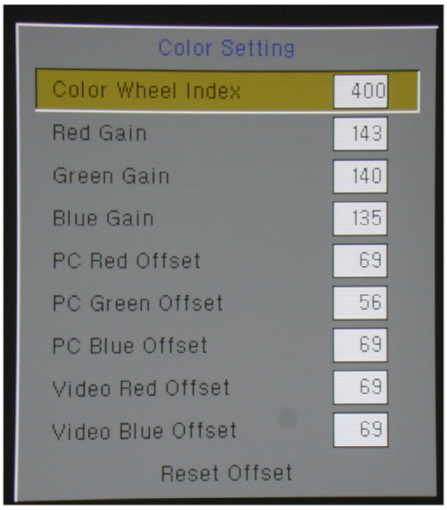

Set Burn In Mode
Lamp on(Min) 0
Lamp off(Min) 0
Set Burn In Cycle 0
Enter into Burn In Mode
Return to Service Menu

Test Pattern

Select “Test Pattern” and then press “Enter” key to activate “Test Pattern” for function test.

Color Wheel Index

Select “Color Setting” and then press “Enter” key to Enter “Color Setting.”
Choose “Color Wheel Index” and then the color wheel index can be adjusted by “Left” and “Right” keys.



Color Setting

Color Wheel Index 400
Red Gain 143
Green Gain 140
Blue Gain 135
PC Red Offset 69
PC Green Offset 56
PC Blue Offset 69
Video Red Offset 69
Video Blue Offset 69
Reset Offset

PC Calibration

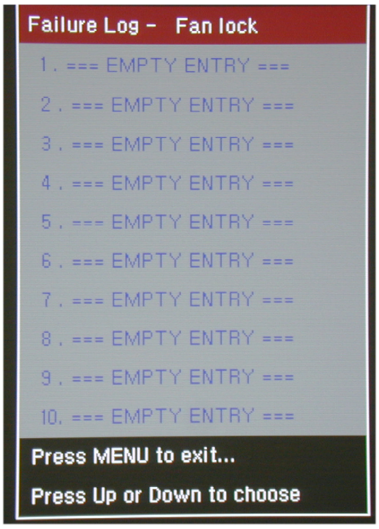
Select “PC Calibration” and then press “Enter” to execute PC Calibration.

Video Calibration

Select “Video Calibration” and then press “Enter” to execute Video Calibration.

Failure Log

Select “Failure Log” and then press “Enter” key to enter Failure Log Menu. Use “Left” and “Right” keys to choose the failure log category.



Failure Log - Fan lock

1 . === EMPTY ENTRY ===
2 . === EMPTY ENTRY ===
3 . === EMPTY ENTRY ===
4 . === EMPTY ENTRY ===
5 . === EMPTY ENTRY ===
6 . === EMPTY ENTRY ===
7 . === EMPTY ENTRY ===
8 . === EMPTY ENTRY ===
9 . === EMPTY ENTRY ===
10. === EMPTY ENTRY ===

Press MENU to exit...
Press Up or Down to choose

Lamp Reset

Pressing “Enter” key will reset Lamp hour.

Password Reset

Select “Password Reset” and then press “Enter” key to reset to no password.

II. Hot Key

Reset Lamp Hour (time)

Press and hold “ON/STANDBY” and “MENU” buttons simultaneously and then plug in the power cord to reset Lamp hour.

Firmware Upgrade Mode

Press and hold “INPUT” and “ MENU” buttons simultaneously and then plug in the power cord to enter the firmware upgrade mode.

Factory Mode

Press “ON/STANDBY” “VOL-” “VOL-” “MENU” sequentially to enter Factory Mode. (Must with signal input)

II. PCBA Code Definition

PCBA Code for Projector

A B XXXXXXXXXX C XXX EEEE

① ② ③ ④ ⑤ ⑥

① : ID

C: M/B
B: DMD/ B

② : Vendor Code

③ : P/N

④ : Revision

⑤ : Date Code

⑥ : S/N